MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

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CURRENT TOPICS

Leyland in America

ONE of the very few companies set up specifically for the production of commercial vehicles at the beginning of the motoring era in Britain, when the so-called Red Flag Act was repealed in 1896, Leyland Motors, Limited, having burgeoned in the meantime with its two associates, Albion Motors and Scammell Lorries, and substantial interests in many overseas countries into what is undoubtedly the world's largest producer of heavy-duty commercial vehicles, is now embarking on a major sales campaign in the United States of America. The Leyland record elsewhere is quite remarkable, with consistent reports of expansion of production and sales from wherever the group has interests, and there is no reason to doubt that success will attend the venture in America. Exemplary performance and economy of Leyland diesel engines fitted to American goods vehicles in numerous overseas markets and to buses by some operators in the U.S.A. itself, have not gone unnoticed by American operators and, more recently, the establishment of Leyland Motors (U.S.A.), Inc., in New York, which is now developing extensive spares and service backing, forms a sound foundation on which to build. So far, large U.S. orders for goods vehicles have not been encouraged by Leyland, but the Albion Chieftains and Clydesdales already in service with American operators are substantiating claims made for Leyland Group vehicles of outstanding operating economy and low maintenance demands. We are sure the Americans will be equally impressed with a new Leyland bus, the first of 60 of which, ordered by Highway Products, Inc., in Ohio, has just been shipped. The new vehicle is a 40-seat single-decker, the rear-mounted diesel engine of which has been designed for removal in under 10 min. and replacement in about 14 min., one of a new range of vehicles developed by Leyland for introduction at the forthcoming Commercial Show.

Economies in Marshalling

THE B.T.C. report for 1959, briefly reviewed in our last issue, refers to the revolution in freight handling now under way on British Railways. A feature is the closing of many small stations and marshalling yards and modernising the remainder. Progress is necessarily slow owing to the immense amount of new construction, re-equipment and reorganisation involved. The new Temple Mills marshalling yard east of London became fully operational last year. Part of the Ripple Lane (Barking) yard also came into use. The new yard at Port Talbot was practically complete at the year's end and out of 57 miles of track in the new Millerhill yard in Scotland 40 miles had been laid. Authority was given in 1959, subject to Parliamentary powers, to construct a fully mechanised yard at Tinsley (Sheffield) which will absorb the work now done at eight yards. At Peterborough, subject again to statutory powers, a new down marshalling yard was authorised; the present up yard is to be remodelled, and the scheme will replace eight existing yards. Meanwhile a new freight depot was opened at Peterborough which will be one of 22 centres where freight sundries traffic in the Eastern Region will be concentrated in future, instead of about 100 as at present. Also authorised in 1959, and covered in the Commission's 1959-60 Bill, were new marshalling yards at Walcot (Shrewsbury) and Brookthorpe (Gloucester); the modernisation of the up and down yards at Ashford (Kent); the construction of new up and down yards at Carlisle to replace five yards built there by the former companies, and two new yards at Lamesley, south of the Tyne, and at Healey Mills, west of Wakefield, respectively; Parliamentary powers for these have already been obtained.

Progress in Resignalling

IN pointing out the advantages of modern signalling in the control of trains, in improving track capacity and in giving additional security to train crews, the B.T.C. report states that one important function concentrated at Commission headquarters has been to seek standard principles which will apply to all regions; these would otherwise tend to follow differing practices, as did the former companies. The Commission is pressing on with the task of standardising and simplifying components and techniques so as to give greater efficiency and reduce costs. During 1959 colour light schemes were completed between Colchester and Clacton, between Clapham Junction and Richmond, in the Newcastle area on a £900,000 project begun in 1950, at Manchester Central and from Brixton to Ramsgate. Between Manchester and Crewe 21 mechanical boxes have been replaced by three modern power cabins; notable features of the new signalling include electronic coding equipment using transistors for the remote control of satellite interlockings over one pair of wires, a technique used for the first time on British Railways. Multi-aspect signalling in the Newport area at a cost of over £2 million was authorised, a signalbox concentration scheme was completed at Acton, and similar schemes to cover the lines between Hayes and Reading and between Pyle and Briton Ferry were begun. The first installation of centralised traffic control in this country was completed during the year over the Sheerness branch, and a projected c.t.c. scheme between York and Hull via Market Weighton will be operated from the power signalbox at York; en route it is proposed to have automatically operated half-barriers at 19 out of 23 public level crossings. By the end of the year some 400 route miles of track and 1,500 locomotives had been equipped with the automatic warning system, on which it is proposed to spend £20 million.

Attracting Merchandise Traffic

REVIVAL of rail passenger and general merchandise traffic in 1959 is regarded in the B.T.C. report as having been "helped and furthered by imaginative commercial action on the part of the railway traffic staff in all regions." There was evidence, it states, that the considerable extension of the Export Express services were appreciated in industry. In particular, the Association of British Chambers of Commerce expressed appreciation of the scheme, stating that it could not be faulted on service or price; yet it did not appear that the railways were getting a proper share of the available shipment traffic. The same principle of assured next day arrival was also applied to freight for inland destinations. Traffic has "accrued slowly but surely" to the recently introduced Condor freight service between London and Glasgow, whereon trains of wagons carrying two containers apiece, adapted for high-speed running and hauled by diesel locomotives, run five nights a week and assure local delivery the following morning. While the high standards of speed and reliability, objectives of the modernisation plan, will not be attained in every part of the railway system until completion of the rolling stock, marshalling yard and resignalling programmes, sufficient improvement is stated to have been secured in some areas to claim the attention of traders "who have been disposed in the past to assume they can get more reliable and economic transport for their goods by road." Utmost advantage was taken of the freedom in rate-making implemented by the 1957 freight charges scheme. Many new bargains were struck in the form, for example, of agreed flat rates, contracts providing for exclusive use of rail transport, or incentive arrangements whereby rates are reduced after the tonnage consigned exceeds an agreed figure.

LEADING FEATURES IN THIS ISSUE

Local Interests Make Good

A RECEPTION in London last week celebrated the centenary year of the Gloucester Railway Carriage and Wagon Co., Limited, which was founded as the Gloucester Wagon Company by resolution of a meeting held on January 30, 1860, on the basis of strong local support and some justifiable optimism as to the future of the railways. It is, indeed, probably true to say that local support has been the reason for the continuance of the undertaking as an independent concern despite periods of considerable difficulty. The first stone of the workshops was laid on April 10, 1860, and it was quite an achievement to have built 313 wagons by the end of that year. Within five years orders were coming from abroad and the Great Indian Peninsula Railway had placed one for 500 sets of wagon ironwork. Before the end of the decade an entry had been made into the Russian market. In the 90 years which have passed since then the company has produced large quantities of passenger and freight rolling stock in many parts of the world, but it has also built some less usual vehicles, many of which are illustrated in the history of the company published to mark its centenary. The 1886 horse tramcar for Gloucester was perhaps conventional as was an 1894 horse bus for Glasgow, but in 1897 there was the carriage for Behr's monorail in the Brussels Exhibition, a year later a cab for the London Electric Cab Company, and the car on stilts for the Black Rock to Rottingdean seashore railway. Bodies were built for Clarkson steam buses and that was not the end of a connection with road transport, for many still recall the Gloster-Gardner coaches operated by Red and White in the thirties. The company's historian seems to feel in places that it may have been over-conservative and he may be right, but it has certainly shared in a number of bold ventures from early Russian railways to the Toronto Subway.

N.U.R. Against Decentralisation

IN his presidential address to the National Union of Railwaymen in conference at Torquay this week, Mr. C. W. Evans said that the financial position of the railways was frightening and Government proposals to meet it appeared to be totally irrelevant. Seldom, if ever, he said, had a political party done such injury to a vital industry as the Conservative Party had done to the transport industry. The Government had refused financial aid for the railway modernisation plan other than facility to borrow at current market prices, which were influenced by Government policy. The N.U.R. believed that a co-ordinated and integrated transport system was the only way in which the problem could be solved. It had never argued in favour of a monopoly for rail. What it demanded was that passengers and freight should be carried in the most efficient and economic manner consistent with meeting the liability of social costs and needs. The welfare of the workers in all nationalised industries was affected and the unions concerned could well co-operate in putting more effort into their defence.

No Condonation of Tampering

ANY form of tampering with the railways or hiving off of any profitable section of the British Transport Commission's undertaking was strongly deprecated in a resolution passed unanimously on Tuesday. The general secretary, Mr. S. Greene, said that, if the co-operation of railwaymen was wanted in the modern system of society where consultation played such a big part, obviously they would want to know what the Stedeford committee was going to do. Unless that was the case, there were clearly great difficulties before even a start had been made. It could not be emphasised too strongly that the N.U.R. had no intention at all of being responsible for, or party to, any more breaking down of the nationalised industry. The matter had, indeed, been raised with Sir Ivan Stedeford and he had expressed the view that the Commission, which, in common with the Ministry of Transport, would be told the findings, would doubtless tell the union what they were!

The late Mr. S. E. Parkhouse

THE death of Stanley Parkhouse removes from the transport scene a colourful and popular character. Steeped in the Euston tradition—his father was an accountant on the old London and North Western—he spent a lifetime in railway operating and became a first-class superintendent. He "knew the job backwards" and had a way with his men that got things done. One first met him in the 1914-18 war on transfer to the R.O.D. in Salonika when it assumed responsibility for serving the British theatre of war. Even in those early days Parkhouse proved himself an able railway officer and nothing short of a diplomat in his dealings with the French and the Greeks, with whom he was in daily contact. Always cheery under the most adverse conditions he got his comrades out of many tight corners. During the last war he was a tower of strength to the L.M.S., and his subsequent promotion to the Railway Executive on nationalisation was thoroughly deserved. He initiated the Executive's country-wide control system and laid the foundation of the Commission's freight wagon policy, though he deplored the choice of the vacuum brake. A keen sense of humour made him a great story-teller, and he was a most likeable and steadfast companion. Although he retired five years ago he maintained contact with his old friends and was often to be seen on social occasions. His cheery greeting will be sorely missed, especially by those who shared with him the good fortune of having worked on the railways in their heyday.

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

Terminal Facilities

PROVISION of public transport, whether for passengers or goods, apart from requiring the equipment and the operating staff, has tended increasingly to call for the provision of facilities designed as much to attract the customer as to make easier his movement by the transport provider. Ideally the beneficial effects of a new bus station or freight depot, a rebuilt railway station or a new airport building should be such that the gains are obvious to all and those who lack comparable amenities hasten to seek them. That is but an ideal and there can be little need at this stage of development of the industry to stress how often it is far removed from actuality. Historically road transport has had the least need of stations for its passengers or for its freight since the development of the motor engine obviated the problem of changing horses that was already much diminished by the railways having taken over most of the longer-distance work. With the increasing reliability of the power unit and higher road speeds there was a greater tendency to concentrate fleets at fewer and larger garages to take advantage of economies that this policy offered, although a number of provincial operators preferred to continue, if in modified form, the maintenance of a number of dormy sheds at suitable villages. All this time, however, there were few cases in which it was felt necessary to cater for passengers by special buildings. Offices in towns were used in some instances as waiting rooms, but the street or, if conveniently situated, the market place or a square was used as the town terminal. Exceptions which spring to mind are Canterbury, Maidstone and Workington, while in London, where the effects of traffic growth were felt earliest, the London General Omnibus Company provided open stations at London Bridge and Victoria and also, of course, used that at the British Empire Exhibition at Wembley in 1924 and 1925.

Expensive Retention of Goodwill

THE thirties, with the growth in bus traffic and the increasing use of the private car, coupled with the more serious approach to town planning which was by then becoming apparent, saw considerable increases in the number of bus stations and it is a commentary upon the difficulties faced by many operators that Tuesday of this week should have seen the formal inspection in Liverpool of the station planned by Ribble Motor Services, Limited, as far back as 1938. Indeed the spate of postwar planning—much of it actually drafted in the later stages of the war when all were full of optimism for the future—has probably done as much to hinder the provision of adequate bus and coach stations as to encourage them. Too many planners, dazzled by glorious visions of shopping precincts and all their concomitants, were anxious to keep the buses well away from the centres of trading which were the goal of the unfortunate passengers. Fortunately many of the schemes met the fate they deserved and it has generally been left to operators to provide stations for themselves. They have had to face the fact that retention of traffic depends to a considerable extent upon making things easier for the passenger. This is what makes many undertakings so reluctant to widen headways despite reduced patronage. If the service is too infrequent the temptation to get out the car or to buy a scooter or a moped is sharpened and, once that has happened, the passenger has gone, usually for good. Not only does it become desirable to provide comfortable accommodation in the towns but also, however uneconomic the practice, to spread shelters around the system. The bus station can offer advantages from the operating viewpoint with improved methods of control, better facilities for the staff and, in certain cases, it can be used to garage vehicles at night. All this should assist in providing some tangible return, while to it must be added the access of public goodwill which the provider has some right to expect. Nonetheless, with the prices of sites at their present level and especially the kind of position needed for successful results, the operator requires a certain amount of altruism to indulge in a somewhat expensive means of retaining public goodwill.

Handling Air Passengers

THE problem for an airline is likely to be different, at least for some years to come, although the growing proportion of passengers making its way to and from airports by private transport has twofold repercussions. It is hastening the tendency to carry out all the actual handling processes at the airport with a consequent need for increased space which many of even the postwar buildings cannot provide while the drive to tap new sources of traffic makes it quite unrealistic to contemplate constriction of town terminal facilities. One solution is that exemplified by Gatwick where the availability of a good train service has met with very substantial public support, yet the Ministers concerned have been quite unable to learn the lesson and authorise similar provision for London Airport. It is like the cross-Channel traffic where, although the proportion using air is growing, nonetheless the surface transport numbers continue to rise. It is precisely the same with airport passengers. The seemingly unquenchable increase in airline loads means that use of town terminals continues to increase and that applies equally in New York, where there are high-frequency limousine (coach to us) services to the three main airports. It must be agreed that if air fares are to be kept down or, if possible, reduced, everything must be done to keep ground handling costs to a minimum, and here the Aer Lingus development in Dublin, where coach passengers load and unload their own luggage, could prove applicable elsewhere. We refer on the opposite page to new designs in both airport and town terminal buildings and there are likely to be many more if the larger loads of the larger aircraft are to be handled with expedition.

Resuscitating Railway Stations

DESIGNED generally for use in a more leisured age, when manpower was available in quantity to undertake whatever tasks there were, railway stations inevitably require more drastic treatment and it is rather sad reading in the annual report of the British Transport Commission that "it would be pleasant to be able to record greater progress in the rebuilding of many obsolete station premises, which have had to wait their turn behind more urgent schemes of modernisation within the limits of a capital expenditure programme fixed year by year." What has been done has been well done, but here again planning problems have proved a considerable obstacle and, even more so, the absence of statutory powers to carry out construction not required for operational purposes. It is regrettable that so many sites of potential value not only as transport centres but for general commercial purposes should be incapable of satisfactory development. It is true that discussions are proceeding on the proposed reconstruction of Euston, Kings Cross and Victoria, but these seem to be almost moribund projects in comparison with that in New York for the redevelopment of Grand Central Station. Much has been said in Britain recently regarding pressure on building space, and green belts have been attracting jealous glances, but little has been done to make possible the satisfactory use in urban areas of a substantial number of potential sites.

MODERN TRANSPORT has an arrangement with Reuter's Trade Service whereby publication is made in this newspaper of all essential news from all parts of the world concerning traffic and transport by rail, road, sea and air and allied interests.

NEWS SUMMARY

THE Vickers Vanguard turboprop air liner, flying of which had been suspended since May 23 due to an engine fault, resumed test flying on July 4. It is expected that sets of production Rolls-Royce Tyne engines will be delivered from mid-September and that certificated aircraft will be handed over for operation before the end of the year.

The National Union of Railwaymen at its annual conference at Torquay was stated by its president, Mr. C. W. Evans, to be strongly opposed to policies of decentralisation which the Government was striving to impose upon nationalised industries.

British Transport Hotels and Catering Services has introduced on certain trains new kitchen buffet cars which, in addition to providing restaurant facilities, also offer a continuous service of light refreshments.

The new Liverpool bus and coach station of Ribble Motor Services, Limited, was formally opened on July 5 (page 5).

The Isle of Man Steam Packet Company has ordered, from Cammell, Laird and Co., Limited, its first car ferry. It should be available for the 1962 season.

The next stage of the London Transport trolleybus replacement programme is to take effect on July 20, when routes 611, 626, 628 and 630 will be substituted.

Ferodo, Limited, has announced its intention to build a new factory in Caernarvonshire in order to expand production of friction materials generally. The company is experiencing continually rising demand for brake and clutch linings from both home and overseas customers.

BUILDINGS FOR AIRLINES

New P.A.A. Terminal at Idlewild

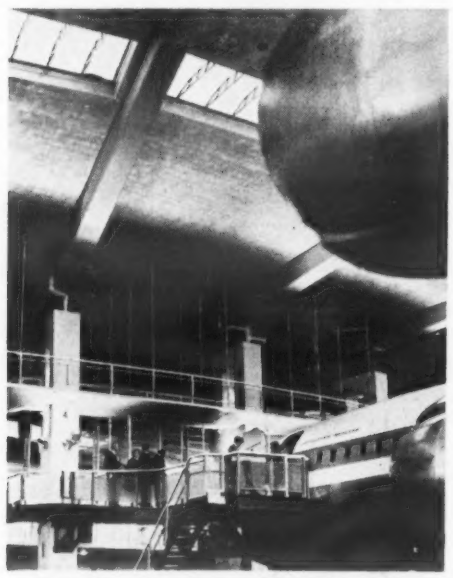
WORK STARTS ON B.E.A. LONDON STATION

WITH the continued growth of passenger traffic by air the need for new buildings at airports in which to handle them is urgent in many cases and much work is going on in all parts of the world. The designs provided depend to some extent upon whether they are intended for general use by all operators at the airport concerned or whether they are for the benefit of a single airline and any others which it may handle. Descriptions of the New York International Airport, commonly known as Idlewild, have already appeared in our columns and it may be recalled that, while passenger-handling blocks have been built by the Port of New York Authority

The new terminal building of Pan American World Airways at New York International Airport showing how the aircraft are sheltered by the large roof

for leasing by users—mostly foreign airlines—the majority of the United States operators is erecting its own terminal buildings. The designs of some of these are unusual to say the least and this is certainly the case with that of Pan American World Airways, which came into use in May.

Although an increasing number of passengers is making its own way to and from the airports, the need for adequate town terminals is still held to be



The adjustable gangway which affords access from the departure areas to the aircraft without using stairs

a matter of importance and particularly in view of the endeavours which are being made to tap new sources of supply. The needs of British European Airways are expected to be such within the next few years that the temporary buildings of the West

A model of the new London air terminal building for British European Airways now under construction at Cromwell Curve

London Air Terminal will be inadequate and work began on July 1 on construction of a permanent terminal, also at Cromwell Curve, which will incorporate also offices to house B.E.A. staff at present dispersed round London.

P.A.A. Umbrella

The P.A.A. building at Idlewild involves the provision of a cantilevered umbrella of steel and concrete covering four acres and providing a roof not only for the passenger-handling areas but also for the aircraft themselves so that passengers can board or disembark under cover. The terminal is designed to handle eight full 120-seat aircraft an hour and, indeed, six large jet aircraft can shelter under the umbrella at a time. The structure, which is oval in shape, occupies part of a 17-acre site just to the south-west of the international arrivals building and this building will still need to be used by arriving passengers requiring customs clearance.

Outward-bound passengers arrive at the first floor level and are confronted by a doorless approach to the terminal. This simple access is made possible by the provision of an air curtain 89 ft. long and 10 ft. high. This curtain, which was designed by the terminal architects, Messrs. Tippetts, Abbett, McCarthy and Stratton with Ives, Turano and Gardner, working with Sulzer Brothers, Inc., is created by blowers concealed in the roof of the three-storey buildings which move 600,000 cu. ft. of air a minute across the entrance at a rate of 1,150 ft. a minute, the air being sucked down through grilles at floor level and recirculated immediately inside the air curtain are the baggage check-in facilities with conveyors to move baggage on and off the scales without delay and a very short distance away over the seat allocation counters where the passenger completes his checking-in process.

Passenger Departures

Surrounding the check-in area are the six departure areas through which the passengers board their flights as the departure time approaches, the lights in the lounge area are dimmed and those in the associated departure area intensified. The passenger then walks along a short adjustable gangway straight into the aircraft. When the building is handling inbound passengers who do not require customs clearance, such as those from Puerto Rico and the Bahamas, baggage is unloaded from the aircraft into bins which are sped to the terminal and fitted to a moving belt which carries them the short distance from the bins at the terminal exit which is on the ground floor. There is an observation platform for visitors and as the first and second storeys have glass walls the passengers also can see their aircraft from almost anywhere in the building. Other facilities include a restaurant with a bar, a coffee shop also with a bar, a snack counter and a nursery.

The overhanging roof is suspended by cables 114 ft. out from the main structure with its outer edge 50 ft. above the ground which gives adequate clearance for the tail of a Boeing 707 or Douglas DC8. The roof has a 528-ft. major axis and a 422-ft. minor axis. It rests on two clusters of vertical members. The outer oval, 228 ft. shorter than the roof, contains 32 reinforced concrete piers. The inner hub, a hexagon at the core of the structure, consists of six tension columns. These are weighted by a 3,500,000-lb. concrete anchor buried 27 ft. underground, beneath 10,000,000 lb. of sand.

Cantilevered Girders

The inner tension columns do not support the roof—they hold it down. Bolted to these columns are the 32 cantilevered prestressed steel girders which frame the roof. Each girder is held in place by six 2½-in cables secured to the outer end of the girder, passed over a 15-ft. high post at the middle of the girder, and tied back to the inner end of the girder a few feet before its connection to one of the tension columns. The entire underside of the roof is covered with acoustical cellular glass.

The structure was aerodynamically tested for flutter and vortex phenomenon. These studies showed the wind velocity that might cause flutter is well above the design velocity, which exceeds 150 m.p.h. This is more than twice hurricane force and far higher than the strongest wind ever recorded in New York—113 m.p.h.

Although this large roof keeps passengers out of the rain, this protection created an added problem for the architects. The reversed-umbrella shape of the roof meant that rainwater would collect near the centre in a volume that could fill the reservoir of a small town. This was allowed to drain through downspouts built into the 32 supporting piers. An

(*Continued on page* 11)

LORRY—BUS—COACH

R.H.A. Revises Conditions of Carriage

A NEW set of conditions of carriage has been drawn up for adoption by members of the Road Haulage Association by a sub-committee of the rates and carriers liability committee. Nearly two years have been spent on the revision and the conditions have been reduced to a size that can be accommodated on the back of an ordinary sheet of letter-headed paper. Some of the old clauses have been deleted in some cases because they merely re-stated the position in law. Major alterations include raising the limit of liability from £400 to £800 per ton; and extending time limits for notification of non-delivery from 14 to 28 days, and for making a claim from 28 to 42 days. These changes are in line with the revised conditions introduced by B.R.S. on January 1 this year.

Extra conditions may be required for certain specialised traffics and Road Haulage Association functional groups are being asked to consider these points. Operators carrying dangerous goods must look carefully to their liability as it may not always be covered by the conditions. These, moreover, refer to the transit of goods and not to the liability that a haulier may incur as a warehouseman. Copies of the conditions may be obtained at any office of the R.H.A.

Road Works and Trolleybus Overhead

REPLACEMENT costs have decided South Shields Transport Committee to substitute buses for trolleybuses on the Ridgeway—Lawe route. As a result of a scheme for the construction of a traffic island on the route it would be necessary to buy additional overhead equipment at high cost. The introduction of buses in place of trolleybuses would be a suitable alternative.

North Western Garaging in Potteries

BY arrangement with the Potteries Motor Traction Co., Limited, North Western Road Car vehicles operating in the Biddulph area will be housed in a new garage recently built by P.M.T. on land acquired from the latter, and the future activity of North Western in this area will be controlled from these premises. North Western has also acquired sites for garages, bus stations and offices in Buxton, Oldham and Wilmslow, and an extensive building programme will be carried out in the near future.

Manchester Position Improved

RESULTS of the operations of Manchester Corporation Transport Department in the year ended March 31, 1960, were that buses had a surplus of £207,855 (£52,794), trolleybuses a surplus of £46,817 (£1,110) and the parcels department a surplus of £5,743 (£5,963). After taxation, renewals and other appropriations this gross surplus of £260,415 was reduced to £148,166 (£15,752) which has gone to the general reserve. This now stands at £449,936. On the buses traffic revenue rose slightly from £6,018,773 to £6,085,250 (34.922d.p.m.) but working expenses were reduced from £5,654,055 to £5,608,214 (32.184d.p.m.). The number of bus passengers carried declined from 364.5 to 360.9 million, although route mileage expanded from 354 to 369. There are 1,352 buses and 122 trolleybuses in the fleet.

Bulk Tanker Weight: a Comment

DISAPPOINTMENT felt by the secretariat of the Traders' Road Transport Association at the rejection by the Minister of Transport of the proposal to increase the permitted gross weight limit of eight-wheeled tankers from 24 to 28 tons is heightened, says Mr. H. R. Featherstone, by reason that from the beginning the T.R.T.A. has been in active support of such an increase, not only in respect of liquids but also for powders and other forms of bulk supplies. It is still hoped that the Ministry may be brought to reconsider the question; in the meantime the position will be kept under active review.

Glasgow Independent Fails Again

THE perennial contest between the Western S.M.T. Co., Limited, and independent operators in the Paisley and Renfrew area figures in another appeal decision by the Minister of Transport. This time McGills Bus Service, Limited, looked as though it might succeed in upsetting the refusal of the Scottish Traffic Commissioners to grant it extended stage services between Spiersbridge and Paisley and Renfrew Ferry respectively because the M.o.T. inspector in the appeal said McGills had established a prima facie case for the proposed extension to Spiersbridge. But the Minister has decided that McGills produced no more than "a desire for a general improvement" on Darnley Road and Parkhouse Road and fell short of proving a real need for further services connecting Spiersbridge with Barrhead, Paisley and Renfrew. A Western S.M.T. route has been varied to meet the case.

Lytham St. Annes Corporation Transport Department has converted two 23-year-old Leyland Titans to open-toppers for a five-mile promenade service. Each has already covered well over 800,000 miles. The Scout Leyland Atlantean reversing out of Preston bus station (right) is on the Blackpool—Burnley route

C.N.R. Buys Four Carriers

THE Canadian National Railways road transport subsidiary, Canadian National Transportation, Limited, has completed purchase agreements with four trucking concerns which will extend its highway service over an additional 15,000 route miles in seven provinces. The company has also taken an option on a fifth company. Between them the four truck lines operate some 375 vehicles. Mr. N. J. MacMillan, executive vice-president of Canadian National Railways, says that this is the culmination of more than two years' planning of a programme to establish a first-class co-ordinated system of land transport throughout Canada. "Basically we regard the truck as the best instrument for retailing transport services, and the railway for wholesaling," he added. Canadian National Transportation is to be operated as a completely separate entity and similarly, the five trucking companies concerned will continue to be operated as separate corporate entities and will function as any independent trucking organisation. The objective is to establish a pattern of collateral trucking service that will give C.N.R. customers across Canada the advantages in service and cost that "intelligent co-ordination of rail and highway activities" should provide. The C.P.R. has been active for some years in road freight transport.

Large Buses Pay Off

DESPITE the intensified efforts of vendors of private transport vehicles, Ribble Motor Services, Limited, held its traffic during 1959-60 at the level of the previous year, i.e. about 204 million passengers. This, says the chairman, Mr. R. P. Beddow, was in no small measure due, apart from the effect of moderate fares, to the increased operation of large-capacity double-deck vehicles. During the year the number of vehicles in this large-capacity class (72-78 seats) increased to 149. By operating these vehicles on selected busy routes, the result has been first to reduce the number of standing passengers and secondly, and more important, to increase the reliability of the services particularly for "fringe" traffic into the towns, the larger carrying capacity having minimised the number of occasions when intending passengers could not be accommodated. Further buses in this class, now due for delivery, will bring the total to 200, to be followed immediately by an additional 55 making 255 altogether.

Mr. Beddow says that so far as he knows no experienced operator of rural services has found salvation in the running of minibuses, and this is scarcely surprising since most rural services could not cater for traffic requirements if maintained by a minibus in place of a normal bus. It is a complete fallacy to assume that because a service is unremunerative, there is never more than a small number of passengers to be carried. Expanded production of the smaller vehicles has, however, provided the means for new owners to indulge in a variety of activites entirely dissociated from the provision of rural services. Inevitably these are frequently cutting into the legitimate markets of the normal p.s.v. operator without making any real contribution towards the problem of rural services.

Competition for Anti-Theft Device

RULES have now been approved by the Road Haulage Association vehicle security committee for a competition for an anti-theft device that the committee judge most effective according to a specification drawn up. The specification is intended for general guidance only, and a device will not be disqualified if it does not comply with the whole specification. The device should, if possible:

1. Be applicable to both diesel-engined and petrol-engined vehicles;
2. prevent a vehicle being either driven or towed away;
3. automatically come into operation when the driver leaves the vehicle;
4. be inaccessible to a potential thief, and invulnerable even if he knows how it works;
5. be non-electric in its operation;
6. be capable of mass production at a reasonable price;
7. not be dangerous to the driver or any other person;
8. incorporate a warning device;
9. have a lock (combination or key) of high quality, with the key (if fitted) or a restricted "registered" design.

If a warning device is incorporated, this should:

10. have a distinctive sound;
11. be separate from the vehicle's normal horn;
12. not be powered by the vehicle battery.

Bus and Coach Developments

Alfred Hymas (Ripon), Limited, seeks the excursion and tours from Ripon of Clarke Brothers.

Northern General Transport Co., Limited, applies to operate between Houghton-le-Spring and Chester-le-Street jointly with Sunderland District Omnibus Co., Limited, which already works the service.

Gliderways Coaches, Limited, seeks licences granted to H. Morris (Investments), Limited, Smethwick.

D. R. MacGregor (Hedingham and District Omnibuses) applies for the stage and express services and excursions and tours previously operated by A. E. Letch, Sible Hedingham.

C. S. Pegg, Stansfield Caston, Attleborough, seeks the licences of D. Goff, Hingham.

Reading Corporation proposes a new weekday service between the Stations and Tilehurst (junction of Westwood Road and Hartslock Way) via Castle Street, Tilehurst Road, Meadway, School Road and Westwood Road.

A. E. Budden and Sons, Limited, West Tytherley, applies for the excursions and tours from Romsey of G. S. Sweet (Pelican Motor Coaches).

The Ashton-under-Lyne—Haughton Green trolleybus route (217) operated jointly by Manchester and Ashton-under-Lyne Corporations was replaced by a bus service—numbered 127—from July 4. The overhead equipment from Guide Bridge Station to Haughton Green thereafter ceased to be needed.

LIVERPOOL BUS AND COACH STATION

Ribble 1938 Project Comes to Fruition

IT is an extraordinary reflection on the way that land redevelopment schemes may be hampered by arbitrary legislation and official indecision, that it has taken Ribble Motor Services, Limited, 22 years to bring its scheme for a new bus and coach station in Skelhorne Street, Liverpool, to a successful conclusion. Negotiations to acquire the site were begun in 1938, but had to be shelved as at that time the city council contemplated making some alterations to the boundary of Skelhorne Street that would have rendered the site almost useless for the purpose required.

Then came the 1939-45 war and the subsequent restrictions on new building projects, followed in turn by the adverse controls vested in the Town and Country Planning Act, 1947. Eventually the less acceptable features of this Act were removed by subsequent legislation, and when the city council decided not to go ahead with its prewar scheme to alter the boundaries of Skelhorne Street, the way again became clear for Ribble to reconsider its original scheme. After outline planning permission to proceed on the site had been given the company negotiated successfully for its purchase and the work was commenced in August, 1956.

The new Ribble bus and coach station in Liverpool with the office block in Skelhorne Street nearest the camera, the bus station to the right and the roof of the coach station visible above the offices

Separate Servicing Facilities

Situated as it is, in the centre of a great city where land is at a premium, the site area is restricted and in order to provide adequate facilities to meet existing traffic requirements it has been necessary to take advantage of the lie of the land to build the coach station above part of the bus station, which is at a lower level. The area of the complete site is 3,435 sq. yd., of which 728 sq. yd. is occupied by a two-storey office block. The extra 1,353 sq. yd. occupied by the coach station has been obtained by bridging over the section occupied by the bus station passenger platform and other ground-floor amenities at a height of 10 ft.

As it is intended to use the bus and coach stations for the overnight garaging of the company's vehicles based on Liverpool, the problem of cleaning and servicing has been solved by erecting a maintenance bay on an adjacent site of 900 sq. yd., bounded on three sides by Hilbre Street, Copperas Hill and Hotham Place. Approximately one-third of this maintenance bay consists of a building which will accommodate two vehicles over pits together with a small store and other necessary facilities, including a high-powered vacuum plant for cleaning the interior of vehicles. The remaining two-thirds of the space will be used for refuelling and mechanical external cleaning and will have standage for six vehicles.

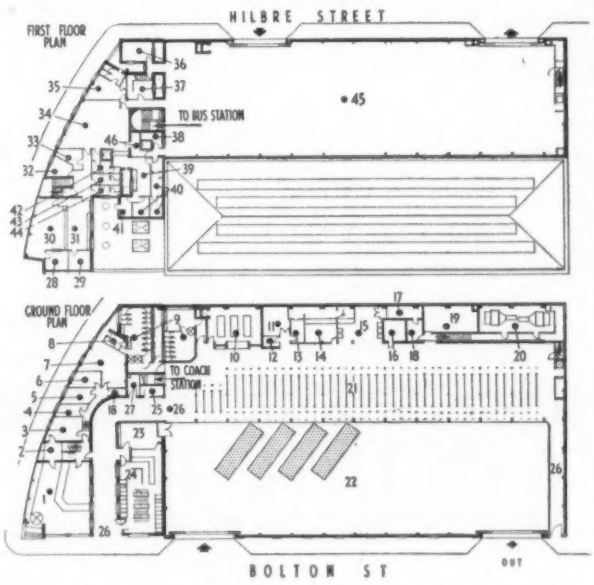
The main area of the bus station provides for 12 head-on loading positions with adequate queueing space for passengers as well as a concourse with access to a public bar, a tea bar, a left luggage office and public lavatories. The concourse also gives access to the traffic control office, tyre store, oil store and station heating chamber. Passenger departures from the station are expected to be in the region of five million per annum with an average of 50 vehicle departures per hour in service time. The coach station will deal with a maximum of 15 coaches at any given time.

Structural Details

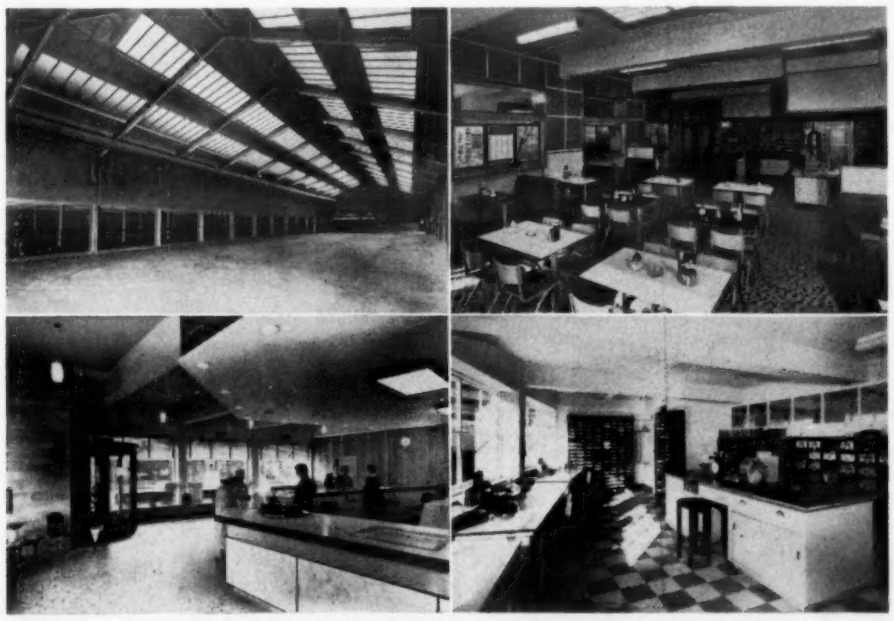
The bus and coach stations are each spanned by steel portal frames with a span of 58 ft. 7 in. The minimum height to the springing of the portal frames is 16 ft. and the maximum 28 ft. 6 in. The deck of the coach station is of 12-in. thick reinforced concrete, the base of the Hilbre Street boundary being a reinforced - concrete retaining wall. The office block is of orthodox steel frame construction with in-situ concrete roof and floors. The roof covering of both stations is of Turners Asbestos Cement combined sheeting colour glazed internally and externally. The windows are metal framed in wood surrounds and use has been made in the coach stations of Pilkington's hollow glass blocks. Vehicle entrances are fitted with metal folding sliding gates and the main passenger entrance is closed by a metal roller shutter. The A.E.I. lighting is fluorescent throughout with tungsten filament decorative fittings in the inquiry office. The heating chamber is situated below the ground-floor passenger concourse level and is equipped with two Volex air heaters. The plant can be used for circulating warm air in winter or cold air in summer and is thermostatically controlled. The fuel-oil supply is housed in a tank room adjoining the heating chamber. Heating to the office section is by means of low-pressure hot-water distribution through coiled pipe panels in the ceilings.

A system of impulse electric clocks with a master clock and slave dials is installed throughout. The telephone exchange in the first floor of the office block also houses an intercom phone system and

(*Continued on page* 11)



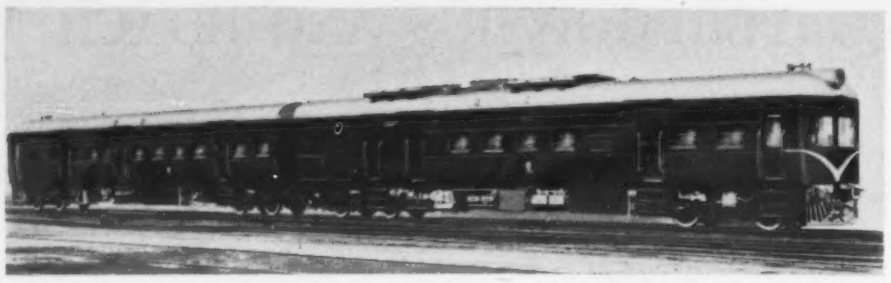
Plans of the two floors of the bus and coach station
1 inquiry office, 2 waiting room, 3 tours supt., 4 typist, 5 area supt., 6 d.t.s., 7 general office, 8 staff toilets, 9 public toilets, 10 left luggage office, 11 tyre store, 12 traffic control office, 13 store (bar), 14 licensed bar, 15 tea bar, 16 electricity sub-station, 17 electrical switchgear, 18 cleaners' store, 19 oil store (heating), 20 station heating chamber, 21 passenger platform, 22 bus track, 23 kitchen, 24 cafeteria, 25 kiosk, 26 passenger entrances, 27 office heating chamber, 28 senior cash clerk's office, 29 ticket store, 30 cash office, 31 road staff office, 32 telephone room, 33 uniform store, 34 staff canteen, 35 female staff rest room, 36 tyre store, 37 traffic control office, 38 kiosk, 39 canteen kitchen, 40 store, 41 canteen staff room, 42 road staff toilets, 43 female office staff toilets, 44 male office staff toilets, 45 coach station, 46 cafeteria staff room



The bus station from the vehicle entrance with the trunking of the heating and cooling air suspended from the portal roof girders; the cafeteria. Below, left, the inquiry and booking office from the entrance from the passenger arcade; right, the clerks' section of the cash office

NIGERIAN DIESEL RAILCARS

*Drewry Units Built at B.R.C.W. (Cont.)**

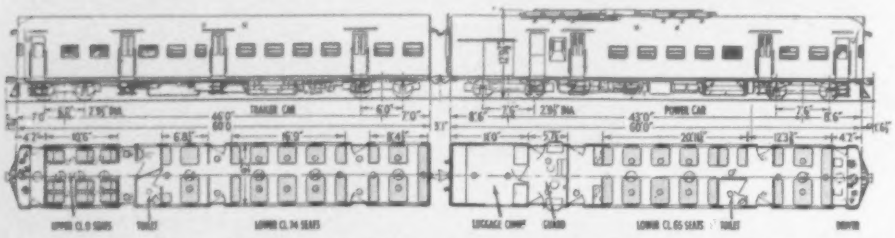


Railcar set for the 3 ft. 6 in. gauge system in Nigeria

THE driving cabs of the latest twin-diesel Drewry railcar sets on the Nigerian Railway Corporation system are spacious and have a full-width control desk housing the control terminal boards, relay operated switches and the V.S. control panel for automatic gear changing as well as parts of the safety and vigilance control apparatus. The driving position is on the right and includes a throttle controller with a deadman's device in the handle, a gear and direction selector, vacuum brake, horn and windscreen wiper valves and an engine control panel which incorporates start-stop pushbutton switches and oil pressure and combined air pressure and direction indication lights; switch, fuse and resistor panels and driving instruments consisting of duplex vacuum and air pressure gauges and engine tachometer and Hasler speed indicators illuminated for night time operation, a handbrake wheel and a vacuum release valve are also provided.

The power car cab has an additional panel carrying lights indicating the water level in the engine coolant header tanks, water temperature and oil pressure gauges, and an ammeter showing the battery charge or discharge rate. The dual note warning horns and the driver's windscreen wiper are operated by compressed air. The driver is provided with a folding upholstered seat which is adjustable in both vertical and horizontal directions; when folded it occupies a space no more than 4 in. in depth so as not to restrict the movement of the inward opening door and its position is such that whilst still seated the driver may change tablets during single line working; the driver's mate's seat of similar design is fitted on the opposite side of the cab.

The cab side doors are one-piece aluminium alloy castings panelled in light alloy on the inside and are fitted with full drop balanced windows and spring roller haircloth blinds. The driver's desk top controls are positioned in such a manner that he may retain full control and at the same time obtain a rearward view when using this window in setting back. The driver's windscreen is provided with a hinged neutral-tinted translucent plastics sun visor to reduce as much as possible the discomfort of driving into a low angled sun. The interior finish is, in the main, of moulded glass polyester laminates, although insulated aluminium alloy panels are also used. The floor is of tongued and grooved hardwood boards laid on the dovetail sheeting.



Drewry Car twin-car diesel-mechanical railcar set built at Birmingham Railway Carriage and Wagon Works for Nigerian Railway Corporation

Power Cars

The power cars are fitted with two Leyland-Albion type RE901 horizontal six-cylinder engines of 15.18-litre capacity, each developing 200 b.h.p. naturally aspirated on site in Nigeria, with a full-load speed range of 600-1,900 r.p.m. The cylinders are 5.5 in. (139.70 mm.) by 6.5 in. (165.00 mm.) and are fitted with wet cast iron liners, the cylinder block and crankcase being an integral iron casting and the cylinder heads, each covering three bores, also being of cast iron.

The crankshaft is a nitrided alloy steel forging integrally balanced, fitted with a viscous-type torsional vibration damper and carried in seven steel shell copper-lead Indium-coated bearings and the camshaft is of cast iron with chilled cams driven by helical gears through an idler shaft from the crankshaft. The connecting rods are of alloy steel and the pistons aluminium alloy fitted with three compression rings and two scraper rings, the top compression ring being chromium plated. The overhead valves are of specially heat-treated alloy steel and are Stellite faced.

Fuel Supply

Fuel injection is by a six-element C.A.V. pump with an integral two-speed governor and a diaphragm fuel lift pump is also fitted, the fuel being passed through a tank sump strainer, a coarse and triple paper element C.A.V. filters and a felt pad in the fuel pump; a total of 150 gallons of fuel is carried in two balanced underframe-mounted tanks, giving the vehicles a range of more than 700 miles at the consumption rate established during performance trials in Nigeria.

The lubricating oil filtration is by a by-pass centrifugal type filter as well as a gauze strainer in the sump, the cooling by a heat-exchanger on the underside of the crankcase utilising the engine cooling water and the delivery by a gear-type pump with a normal operating pressure of 22-55 p.s.i. depending on engine speed.

The engine cooling water is circulated through the roof-mounted radiators and header tank by a gear driven centrifugal pump, a thermostatically controlled by-pass providing an alternative path whilst the engine is below its optimum temperature. The type of spiral tube radiators chosen in preference to those of air-blast type underframe mounted reduces the possibility of damage, obviates the power loss and necessity of maintaining the fan drive and considerably improves engine accessibility. All coolant circulation piping is of copper with Yorkshire standard capillary fittings, the number of these being kept to a minimum.

The single header tank is divided for circulation purposes so as to provide a separate system for each engine, although the division allows water to flow from one side to the other when filling is in progress and the visible indication of a full system provided by the spill pipes will not be given until both engine systems are filled; filling may be done from roof or ground level. A float switch causes a low-water-level indication to be given in the cab and also cuts out the affected engine but provision is made for emergency topping-up of the system by the transfer of water from the lavatory roof tanks of the power car and a semi-rotary hand pump is fitted in the guard's compartment for this purpose.

Air Cleaning

On railways employing dirt ballast the provision of clean induction air raises some difficulty and in these vehicles air is drawn from roof level, both the induction and coolant pipes being brought down to the underframe through ducts in one of the passenger vestibules; primary filtration is by a Burgess centrifugal cleaner above the roof and the air is passed through a heavy-duty oil bath on the underframe. The compressor intake is also drawn from the filtered engine induction.

The engine exhausts are carried through the underframe to the rear end headstock, primary silencing being provided immediately after the exhaust flexible connection and secondary silencing on the vehicle body end. Engine fire protection is provided by the Graviner automatic system with special continuity checks, which in addition to giving audible warning in each cab operates a visual indicator on the underframe adjacent to the affected engine and shuts it down.

The engine is carried in a three-point resilient suspension and its removal and replacement is facilitated by the provision of a simple built-in lifting gear consisting of twin chains anchored at the engine centre of gravity, and connected over pulleys to a running nut on a horizontal jacking screw operated by a ratchet spanner included in the tool kit. An engine-carrying trolley moving in bulb-angle track laid across the running rails receives the engine when lowered and since the engine is virtually plumb when suspended it can be easily installed by two men.

Transmission

The two power units and transmission groups are symmetrically disposed in the underframe, each engine driving the inner axle of the adjacent bogie through a Vulcan-Sinclair Fluidrive hydraulic coupling, the driving member of which is bolted to the engine flywheel, a Wilson SE.4 epicyclic gearbox (ratios 3.33, 1.96, 1.35 and 1:1) fitted for V.S. automatic control and an A.E.C. 237E final drive unit (overall reduction ratio 3.75:1) incorporating forward and reverse dogs for change of direction. The short Hardy Spicer cardan shaft between the engine output and the gearbox input flanges includes a freewheel which, in the event of the engine being shut down by one of the protective devices, will permit the driver to proceed without pausing to neutralise its transmission, though it is of course possible to do this if a transmission defect renders it necessary.

The control of throttle and change-speed and forward and reverse gears is electro-pneumatic, the magnet valves being carried in two boxes on the underframe which are readily accessible for maintenance from the side of the car; these controls are direct though certain protective features in addition to engine starting and stopping are relay

(*Continued on page 7*)

SUBCONTRACTORS

Engines, final drives, control equipment ..	British United Traction, Limited
Gearboxes and V.S. control..	Self-Changing Gears, Limited
Radiators	Spiral Tube and Components Co., Limited
Brakes	Gresham and Craven, Limited
Drawgear	A.B.C. Coupler and Engineering Co., Limited
Wheels and axles ..	Owen and Dyson, Limited
Axleboxes	Hoffman Manufacturing Co., Limited
Springs	Turton Brothers and Matthews, Limited, Jonas Woodhead and Sons, Limited, Williford and Co., Limited.
Electrical equipment..	J. Stone and Co. (Deptford), Limited
Window equipment ..	Georges Klein et Cie; Beckett, Laycock and Watkinson, Limited; Rawlings Manufacturing Co., Limited
Screen wipers	Trico Folberth, Limited
Safety and vigilance equipment	Davies and Metcalfe, Limited
Seating	A. W. Chapman, Limited; Accles and Pollack, Limited; Auster, Limited
Formica panels ..	Formica, Limited
Fire protection equipment	Graviner Manufacturing Co., Limited; Nu-Swift, Limited
Parcel racks .. .	George Gibbons and Co., Limited
Instruments	Smiths Industrial Instruments, Limited Hasler Telegraph Works, Limited; Negretti and Zambra, Limited; Sangamo Weston, Limited

* First portion appeared June 18.

operated. Local engine start-stop panels with manual throttle controls are provided at the centre of each side of the power car for use of depot staff and both engines may be controlled from either side. The engine start switches in the cabs are interlocked to prevent excessive battery discharge caused by starting both engines simultaneously.

Automatic Control

The V.S. automatic control manufactured by Self-Changing Gears, Limited, consists of a number of potential backed relays operated in sequence by the varying output of a speed-sensing generator driven from the gearbox output shaft; the vehicle speed at which these relays operate can be modified, within limits, by adjusting the backing potential. The primary relays operate secondary battery-fed relays which in turn successively complete circuits to the gearbox magnet valves so that as one is closed all others are opened. So as to reduce brakeband wear it is desirable to close throttles at the moment of gearchange and the V.S. control supplies an electric signal for this purpose. An isolating switch opened mechanically by the application of the brake provides an interlock which prevents gear engagement in this condition. The V.S. control panel which is housed in a single containing box is connected to the car wiring by cable harnesses which facilitate its removal for servicing.

Automatic gear control by consistently relating throttle position and vehicle speed enables the optimum engine performance to be obtained, increases passenger comfort and materially reduces the period of driver training as control under normal circumstances is reduced to throttle and brake valve operation; to start the vehicle it is necessary only to select the drive (two giving slightly different throttle-gearbox relationships to eliminate hunting on adverse gradients are provided) and open the throttle, thus automatically engaging starting gear; the reverse action, the closing of the throttle, energises holding circuits on the secondary relays and then, at a speed of 5 m.p.h., allows the gearbox to drop back to neutral.

Air Compressors

Compressed air for the electro-pneumatic control system is supplied by two engine-mounted vee-belt driven compressors feeding into a series of three underframe-mounted reservoirs, the first and smallest of which incorporates an unloader valve and the second a diverter valve which ensures that pneumatic throttle control may be obtained as soon as operating pressure has been reached in the first, the third being an auxiliary reservoir of similar volume to the second. Each twin-set is pneumatically self-contained, as this obviates the possibility of the more efficient compressors continually overworking when in multiple unit.

The control air pressure switches are arranged so that they permit the driver to obtain pneumatic throttle control from the cab until pressure reaches 65 lb./sq. in. but prevent selection and indication of forward or reverse gears before the pressure reaches 70 lb./sq. in.; this feature reduces the time necessary for the build-up of pressure and the creation of vacuum when the railcar is being brought into service.

Electrical Equipment

The electrical supply is 24 volt, obtained from 100-amp. IR29L generators mounted on each car, that on the power car being vee-belt driven from the output side of one gearbox and that on the trailer car being belt driven from the inner axle of one bogie. The Alconium-nickel-cadmium cells are arranged as a single battery of 410 amp.-hr. capacity on the power car and as a double battery of 175 amp.-hr. capacity on the trailer car. On both cars the batteries are housed in two timber boxes carried in angle-iron cradles, and provision is made for the charging of the batteries from an exterior source. All this equipment is supplied by J. Stone and is, with the exception of the cell used for the power car battery, standard with equipment already in use on Nigerian Railways.

In the third-class portions of the vehicles the open-type Duriston ceiling lighting fittings are arranged to correspond with the seating layout and the degree of illumination is considerably greater than in stock previously built for Nigeria; Imperiston 15-in. fixed-type fans are provided, though these are not individually switched nor are they under passenger control. The second-class saloon in the trailer car and its associated vestibule and toilet compartment has enclosed-type Luxton fittings and the Imperiston 12-in. adjustable fans in the saloon may be individually controlled and regulated by the passengers. The cab illumination is from a single open-type fitting and an Imperiston 9-in adjustable fan is also provided. The lights in the guard's and luggage compartments are separately switched so that an alternative feed may be obtained for this portion of the vehicle should through train lighting be switched off.

Lighting and Fan Control

Nigerian Railway passenger stock is usually arranged for through-train control of lighting and fans and for block rake working, but the latter feature presents a number of difficulties on multiple-unit diesel railcars and for this reason has not been incorporated in these vehicles, although all necessary wiring is installed and the cars may easily be converted at some future date; the main difficulty lies in preventing engine starting current being drawn through the train lines from remote batteries without introducing complicated and inconvenient safeguards.

In the event of power-car battery failure, starting current may be obtained from the battery of another power car by connecting the two with a special jumper cable carried in each vehicle and it is possible also, in this event, for the driver to select the trailer car battery for control purposes when driving from the power car. These provisions enable a twin unit to be put into service even though the power car battery charge is insufficient for starting and control, a distinct advantage in operating. A 14-in. Tonum E headlight and combined side and tail lights with colour-changing mechanism are fitted to the driving ends of both cars.

Brake Equipment

These vehicles are fitted with Gresham and Craven's quick release A.I.V. brake system, the vacuum being created by dual Clayton Dewandre Rega 242-1 exhausters on the power car, vee-belt driven from the input side of the gearbox; these charge the reservoirs used for brake release with a vacuum of 26-27 in. of mercury and the release time is thus independent of exhauster speed, which on railcars is usually at its lowest when the vehicle is stationary and therefore immediately prior to brake release. The brake cylinder working vacuum, controlled by a feed valve between the driver's brake valve and the train pipe, is 20-21 in. and the "topside" vacuum does not exceed this figure. The high vacuum release reservoirs, in the event of their being lowered to a point (18-19 in.) at which they cease to assist rapid release, are disconnected from the exhauster pipe and consequently the brake cylinders by an automatic isolating valve and this then reduces the volume which must be evacuated by the exhauster before release is obtained.

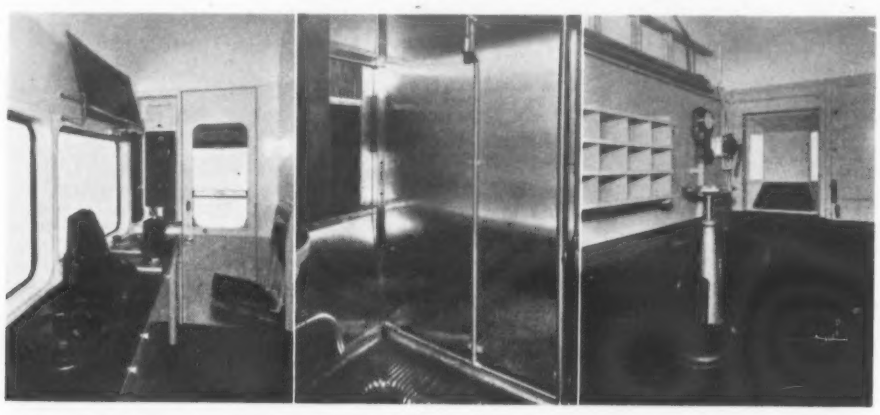
A vehicle not having the quick release system may be attached to the rear of a rake of railcars so fitted, which are working in multiple unit, though the release time will to some extent be adversely affected. The sets may, provided that the vigilance control air inlet valve to each power car is isolated, be "dead hauled" by a locomotive not fitted with the A.I.V. brake, and full vacuum brake control will be obtainable in the locomotive.

The brake cylinders are underframe mounted on both the power and trailer cars operating through foundation rigging, in which 12-in. Dabeg Mark II slack adjusters are incorporated, to the bogie; the trailer bogie is fitted with the railway's standard single-block rigging but the driving bogie, which has a longer wheelbase so as to accommodate the final drive unit and of course higher axle loadings and brake forces, is fitted with clasp rigging; the brake force on both vehicles is 80 per cent of tare. The railway's standard passenger communication gear is fitted, though the emergency valve bore, normally ¾ in., is increased to 1 in. in order to overcome the recuperative tendencies of the high vacuum system.

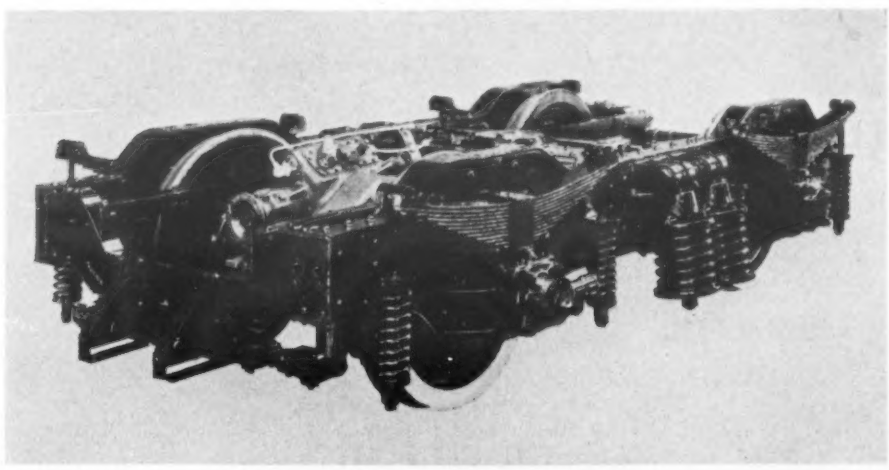
Vigilance Control

The power cars are equipped with Oerlikon vigilance control apparatus manufactured under licence in this country by Davies and Metcalfe; it is believed that this is the first application of the system to multiple-unit working. It was the opinion of the designers that the system applied to multiple-unit railcars should preclude the necessity of

(*Continued on page* 10)



Driving compartment, Asiatic lavatory and guard's brake of Nigerian Railway Corporation diesel-mechanical railcar sets by the Drewry Car Co., Limited, built by the Birmingham Railway Carriage and Wagon Co., Limited



Power bogie of Drewry railcar for Nigeria

NEWS FROM ALL QUARTERS

Aberdeen—Inverness Diesels

The diesel train service between Aberdeen and Inverness began on July 1. Three-car diesel trains with observation ends will connect the two towns in 2¼ hours morning and evening.

Now a Scottish Day Rail Rover

The first Scottish day rail rover ticket became available on July 1. It costs 25s. and allows unlimited travel for one day within territory bounded by Edinburgh, St. Andrews, Dundee, Perth, Comrie, Callander, Stirling and Falkirk.

Modernisation at Grimsby Town and Cleethorpes

Modernisation, to commence shortly, will result in the complete renovation of Grimsby Town, on the Eastern Region. No major structural alterations are to be carried out. Cleethorpes is to get similiar treatment.

Named C.I.E. Trains

Names have been given to fast expresses of Coras Iompair Eireann between Dublin and Cork and Dublin and Galway and a corps of hostesses has been engaged to work on them. This is part of a move to increase train speeds and cleanliness in all parts of the C.I.E. system.

Single Control Room at Nottingham

A new control room at Nottingham Victoria combines the former Eastern Region control room at Victoria Station with the one at Midland Station. Amalgamation of the two control rooms has enabled staff costs to be reduced by approximately £30,000 a year.

Port Talbot By-pass

A contract has been let to the Cleveland Bridge and Engineering Co., Limited, at a cost of £329,216, for the first stage of the scheme to by-pass Port Talbot on the London—Fishguard trunk road. The contract covers the widening of the existing road between Baglan and Briton Ferry, a distance of just over one mile.

Modern Road for National Trust Area

Trunk road A38 is to be widened to provide a modernised link between the northern end of the Bristol—Birmingham motorway at Lydiate Ash and the outskirts of Birmingham. It will have a special 5-ft. wide footpath for walkers. The old, twisting three-lane road is to be replaced by modern 24-ft. dual carriageways.

Railroad Subsidy from Highway Taxes

Several proposals to divert highway user tax revenues to subsidise rapid rail transit as the solution to city and freeway congestion in the U.S.A. have come to the fore recently. In New Jersey, both houses of the legislature have passed a bill which provides for subsidising commuter railroads. It is estimated that it can cost the state up to $7 million annually, and would come out of state highway funds in the 1960-61 budget. The amount apportioned to each of nine railroads involved will be determined in contracts between the railroads and the State Highway Commissioner and will depend upon the number of passengers and the distance they are carried.

Wenner-Gren Canadian Project

The Wenner-Gren Pacific Northern Railway has received authority from the provincial government to build a line from Prince George, British Columbia, to the Yukon border, but the sanction of the Public Utilities Commission is necessary.

Miniature Railway to be Auctioned Up

As attempts to sell the Ravenglass and Eskdale Railway in Cumberland as a going concern have proved unavailing, it is to be offered by the owner, the Keswick Granite Co., Limited, at auction at Gosforth on August 10.

Low Cost Bituminous Roads

At Kampala, in Uganda, a group of engineers from the Esso research centre at Abingdon has been supervising the laying of a series of test road surfaces employing a non-hardening bituminous material. This comparatively new and economical road-making technique, which has been used successfully in Sweden during the last three years, has a unique self-healing property which has been used to advantage on roads which are damaged by frost and rain. The purpose of the experiments is to discover if this technique could be adapted to tropical conditions.

New Tawe Bridge for Swansea

A three-span reinforced-concrete bridge over the River Tawe will be a feature of the final section of the east side approach road to Swansea, on which work will start soon. This final section of the road, about one-third of a mile in length, will link the new road system which forms part of the reconstructed central area of the town with the new dual-carriageway road from Swansea Docks, via Jersey Marine, to the Neath by-pass at Earlswood roundabout. The new bridge over the Tawe will be 208 ft. long and 75 ft. wide, with a 100-ft. centre span and two outer spans of 54 ft. each.

Level Crossings Warnings Improved

Twin flashing red lights, with the word "Stop" on the lenses, are to be installed at certain railway level crossings to warn drivers of road vehicles when a train is approaching. Failure to obey the signal will be an offence. This is one of four new level-crossing signs prescribed in the recent Traffic Signs (Amendment) Regulations. On double-track lines there will be an indicator which can be switched on to show "Second Train Coming." A two-tone gong may also be used at some crossings. Various modifications to police signs and other road warnings are laid down in the regulations.

Holborn Parking Meters in October

Parking meters reach the north-west corner of the borough of Holborn on October 3. The area is bounded by, but excludes, New Oxford Street, Bloomsbury Way, Southampton Row, Woburn Place, Tavistock Square, Gordon Square, Torrington Place and Tottenham Court Road. This Holborn scheme is similar to the controlled parking schemes now operating in Westminster and St. Marylebone except that parking on Saturday mornings, although still confined to meters, will be free of charge or time limit, and in certain parking places goods vehicles will not be allowed to park.

COMMERCIAL AVIATION

More Freighters for T.W.A.

FIRST BOEING 707-120B

IT is announced that Trans World Airlines is to convert six of its long-range Lockheed Super Constellation L1649A passenger aircraft into freighters to help meet increasing demands for long-distance, heavy-lift cargo capacity. The first aircraft to be converted, in a programme estimated to cost about $1,500,000, is scheduled to enter service on or about August 15. They will strengthen the T.W.A. all-cargo fleet which at present comprises eight Super Constellations, series A and H. Mr. S. C. Dunlap, vice-president, cargo sales and market development, has commented that the capability of the newly converted air freighters to make non-stop crossings of the Atlantic in both directions, with maximum payloads, would enable T.W.A. to offer considerably augmented transatlantic cargo service between London, Paris, Rome, Milan, Frankfurt, Zurich, Geneva and New York. The modifications will provide a main cargo door of 8 ft. 10½ in. by 6 ft. 2 in., opening upwards to an angle of 165 deg. The forward cargo entrance will measure 4 ft. 8½ in. by 6 ft., both doors permitting simultaneous loading and unloading. Structural strengthening of the aircraft floor plus special tie-down points for heavy shipments will also be involved.

No-Passport Trips to Paris

Improved no-passport facilities for Skyways coach air passengers who are British and Irish nationals are now available because of recent Government concessions. Day return and 24- or 48-hour trips to Paris may be made without passports, although special identity cards must be held by passengers. The day return and 24-hour flights, the latter allowing for a night stop in Paris, are available at the following fares: Lympne Airport—Paris £6 1s. (daily), and London—Paris £6 15s. (Saturdays and Sundays only). Because of operational limitations, day return flights will be restricted to groups of not less than 15 passengers.

Misrair Receives Second Comet

Within three weeks of the delivery of the first Comet to Misrair, the United Arab Airline, a second de Havilland Comet 4C was handed over to the company at Hatfield on June 28. Thus two of the three Comets ordered by Misrair on December 30, 1959, had been delivered within six months. The third aircraft is due for delivery early in 1961. The total value of the contract exceeds £3½ million. The second aircraft (SU-ALD) was accepted on behalf of Misrair by Mr. Hussein Tewfick, the deputy manager of Misrair, and Captain M. Helmy Shams, the chief pilot and director of operations. Like its forerunner, which flew from London to Cairo in 4¼ hr. on June 10, the second aircraft was flown to Cairo by Captain Shams on June 29.

Boeing 707-120B Makes Initial Flight

The first Boeing 707-120B has made its initial flight from Renton Municipal Airport and landed at Boeing Field, Seattle, after a 99-min. shakedown flight. Built for American Airlines by Boeing Airplane Company Transport Division, the new Boeing 707-120B will be based at Boeing Flight Centre in Seattle for Federation Aviation Agency certification tests. The new Boeing jetliner is equipped with four Pratt and Whitney JT3D engines, each producing 17,000 lb. of thrust at take-off and giving improved performance and efficiency. Maximum cruising speed will be 610 m.p.h. The engine is the first American unit embodying the by-pass principle where the air is pushed back past the engine as well as through it —a system pioneered in Britain by the Rolls-Royce Conway. In addition to the new engine the Boeing 707-120B incorporates aerodynamic improvements, including increased wing sweep-back between the fuselage and inboard engines for better high-speed performance and added leading edge flap segments which help the wing provide more lift at low speeds. Qantas Empire Airways has ordered three turbofan-powered 707s and will have its present fleet of seven Boeings converted to 707-120Bs in the future. American Airlines will convert its present fleet of 24 120s to the 120B configuration.

Air Navigation Order 1960

A revised Air Navigation Order has been laid before Parliament with the aim of rearranging and consolidating the contents of the previous 1954 Order and subsequent amendments, and bringing the technical provisions up to date. A good deal of administrative material has been eliminated. There has been detailed consultation with representatives of affected interests. For the purpose of making new regulations the Order came into operation from June 20 and regulations will be laid which will come into force on the same date as the rest of the Order, namely August 15. These regulations will include the Rules of the Air and Air Traffic Control Regulations, the Air Navigation (General) Regulations and the Air Navigation (Fees) Regulations. Among the modifications which the Order and Regulations will affect are the following: Provisions as to flight time, rest periods and duty periods have been extended to cover all aircraft operated by an air transport undertaking whether or not the aircraft is actually engaged in public transport when flown. Thus a plane returning empty from a charter flight will still be covered by these provisions. This does not apply to flying clubs and flying schools. The Minister of Aviation may now make regulations prohibiting or restricting flying over any specified area in the national interest as well as in the interests of safety.

Technical requirements for take-off and landing are also being modified. All aircraft flying for public transport or instructional purposes must now use government or licensed airports. There are three exceptions, gliders carrying only members of a flying club, aircraft weighing less than 6,000 lb. all-up on non-scheduled services, and helicopters on non-scheduled services. The 1954 Order differed in that it allowed any aircraft to use any field provided it was on a non-scheduled service and only those passengers hiring the craft were carried. Foreign-owned aircraft may now be registered in the United Kingdom under certain conditions. Thus when a British airline borrows or hires a machine without a crew from a foreign airline, the aircraft may be registered here during the time it is in the possession of the British line. A foreign resident in the United Kingdom may now register his aircraft there but the aircraft may then be used only for private flying. The new Order like the old does not in general apply to military aircraft, and this term is now defined as including aircraft being developed under government contract for military purposes.

FORMER B.R. OPERATING OFFICER

The late Mr. S. E. PARKHOUSE, O.B.E., M.Inst.T.

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As recorded with great regret in the last issue of MODERN TRANSPORT, the death has occurred of Mr. Stanley Ernest Parkhouse, O.B.E., who, when he retired from the post of chief of operating services (British Railways), British Transport Commission, on January 31, 1955, had had 49 years' railway service. Entering the employ of the former London and North Western Railway in 1906, he was appointed assistant to the district superintendent, Euston, in 1914, after experience in the operating and commercial sides, but was then away until 1920 on war service with the Railway Operating Division, Royal Engineers, much of it with the British Salonika Force; he attained the rank of lieutenant-colonel and was awarded the O.B.E. and two mentions in dispatches. On returning to the railway he held various appointments in the operating department at Crewe, Liverpool, Birmingham and Willesden. In November, 1932, he was made assistant (freight services) to the chief operating manager and then in February, 1935, Mr. Parkhouse became divisional superintendent of operation for the western division of the L.M.S. Railway with headquarters at Crewe. Occupying that post for nine years he was responsible for the movement of important wartime traffics. In 1944 he became assistant chief operating manager, L.M.S., and from 1948 was responsible, first with the Railway Executive as chief operating officer and latterly with the British Transport Commission as chief of operating services, for important work on the co-ordination of inter-regional traffic working and operating practices throughout British Railways. He was a former member of council of the Institute of Transport and for his paper "Railway Freight Rolling Stock" in its 1950-51 session he received a British Transport Commission award. (Editorial reference to his career appears on page 1.)

IN PARLIAMENT

Growth of Pipelines

GOVERNMENT STUDY UNDER WAY

DISCUSSION of the proposals by the Esso Petroleum Co., Limited, as included in its private Bill, to construct private pipelines, gave the Commons ample opportunity to air its fears of a "pipeline age" rivalling the railway age in intensity and ferocity. MR. W. WARBEY, speaking on the motion for second reading of the Bill, recalled that this was a project for the construction of two lines, about 75 miles in length, running from Fawley, near Southampton, in one case to London Airport and in the other case to Avonmouth. The first would carry aviation fuel, the second ethylene gas to the I.C.I. works.

He feared that the same kind of thing could very well happen as happened in the case of the early railway development in this country, namely, the haphazard construction of a network of lines, very often duplicating and overlapping, constructed at great inconvenience to public and private interests, and not, in the end, producing a properly co-ordinated and effective system serving the public interest. Therefore, we had now to examine, from the broad national point of view, to what extent these pipelines should be constructed, how and upon what conditions.

Construction and Operating Rights

If these pipelines were necessary, by whom should they be built, owned and operated? There was already in existence a state-owned pipeline from Shellhaven, on the Thames, to London Airport; it was rented at the moment by the Shell-Mex and B.P., Limited, which was constructing its own pipeline for which it had obtained the authority of Parliament, from Walton-on-Thames to London Airport, so that there would be two pipelines serving London Airport. But that did not satisfy Mr. Warbey, who said that there was not "an iota of difference" between aviation spirit of different refiners.

We must consider very seriously, he went on, whether we should allow a private company to undertake this form of activity. *The Times*, in a leading article on May 27, expressed some concern about the rights and powers which the company is seeking in the Bill. It said:

> "The oil companies, like other limited liability companies, are private concerns operated for private profit. It might be thought that the nature of their operations invests them with something of the status of public utilities. They dispense products of scarcely less universal importance than electricity or gas. If that is so the question arises how far they should acquire also the *de jure* status of public utilities and be equipped with some of the powers of statutory undertakings, as this Bill would do, without incurring the full liabilities of the latter."

Government Network

The state already had a network of about 1,200 miles of pipelines, said Mr. Warbey, constructed for strategic purposes during the war. What was happening to those pipelines now? Were they being used by the transport of oil? "I would like to see the internal operations of the oil companies put under public ownership and control. The import, refining and marketing of oil, everything that took place in this country, should be publicly owned and controlled."

MR. AIREY NEAVE, from the Government side, said that he proposed to keep rather more closely to the terms of the Bill than the previous speaker. He realised that it raised important issues as to how far public or private companies should acquire compulsory powers. There was the question whether if more pipelines were to be laid down and a system of pipelines was to follow these projects, the private Bill procedure was a desirable one for dealing with these schemes. He did not think that it was and hoped that the Minister of Power would intervene to say what was the Government attitude and future policy with regard to pipelines, and how future schemes should be dealt with by Parliament. There were clearly great disadvantages in the present procedure.

Many people in the railway industry, said MR. P. NOEL-BAKER, felt that one solution to the pipeline problem in the United Kingdom, which, incidentally, would solve many of the difficulties which were inherent in the present proposals embodied in the Bill, would be to run new pipelines along railway tracks. The railway system in this country provided a network serving all important industrial points on the map and it would be a relatively simple matter from a technical point of view to install pipelines beside main-line railway tracks. Such a scheme might, incidentally, provide British Railways with a valuable additional source of revenue if some payment were made to it by the interests controlling the pipelines in return for the facility of using the tracks. He understood that prominent people in British Railways had studied these problems. What he was concerned about was whether or not the British Transport Commission would receive by way of wayleaves for the renting of these sites as much as it would lose by way of freights once the oil was diverted from the tankers on the railways to the railside pipelines.

Parliamentary Procedure

The Minister of Power, MR. RICHARD WOOD, said that pipelines would be of considerable assistance to our home refining industry. Both of the proposed lines would enhance the value of the Government network of pipelines, to which they would be linked. As to the future, the Government believed that it was most important that an examination should take place on the general problem of pipeline development. In fact, it had already begun to examine this problem and to examine procedures which should be followed in future in regard to these matters. He undertook to make a further statement to the House when that examination was complete.

There was a whole range of possibilities of the use of pipelines, not only for oil but even for bulk solids. This would begin to be opened up only in the next 10 to 15 years. One of the industries most likely to benefit directly from the expanded use of pipelines was the coal industry.

British Standards Institution has published a specification, B.S.3247:1960 Part 1: Rock Salt, covering the application of neat rock salt to roads for the dispersal of ice and snow. Obtainable from the B.S.I., Sales Branch, 2 Park Street, London, W.1. Copies of the new standard cost 3s., plus postage, to non-subscribers.

Winston Electronics, Limited, Shepperton, has become a wholly owned subsidiary of the Dynamics Corporation of America, New York. The terms of the takeover include payment in cash plus a large block of D.C.A. stock in return for the total shares, privately held, of Winston Electronics. The Winston Shepperton works is being expanded, eventually to employ about 800, compared with over 200 at present.

BRITISH VEHICLES IN AUSTRALIA

Contribution to Snowy Mountains Scheme

AN example of the varied tasks which British diesel vehicles undertake nowadays is to be found in a 5,000 sq. mile area of Australia where a large fleet of Leyland Group lorries is making an enormous contribution to the vast Snowy Mountains hydro-electric and irrigation scheme. Leyland, Albion and Scammell machines form a large proportion of the heavy-duty fleet operated by the Snowy Mountains Authority. In addition there are no fewer than 100 Leyland vehicles employed by contractors to the authority.

Placed in service in 1951, the first Leyland Hippo six-wheelers carried out much of the pioneer work of transporting materials for camp and road construction. Hippo dumpers were in at an early stage of the tremendous road-building job and they are still opening up mountainous country which hitherto was inaccessible even to pack horses. Ploughing through mud, slush and snow with 9 cu. yd. of rock or gravel, the dumpers are said to be worth their weight in gold by the engineer in charge of the heavy-vehicle pool.

Medium Tippers

In 1956 the Leyland Comet 95 with a 5 cu. yd. body filled the need for a medium-weight tipper for roadwork: they were so satisfactory that more were acquired in the following year and these have since been joined by a fleet of similar capacity Albion Clydesdales fitted with the Leyland O350 diesel engine.

In winter months, a number of the Hippo dumpers are converted into snowploughs, large Vee blades at the front being operated by the standard hydraulic hoist mechanism. In this form they are employed 24 hours a day to keep main roads open. Leyland Beaver and Hippo tractors with low-loading semi-trailers are kept busy transporting earth-moving and power-house machinery, as well as complete houses between construction sites and Cooma. On occasion these particular vehicles have been grossly overloaded with 40-ton excavators to satisfy various emergency demands. The 80,000 miles or so covered to date by each of these tractors is considered to be equivalent to three times the distance under normal operating conditions.

A number of Hippos fitted with the Leyland O680 diesel engine have proved themselves, particularly when they or the Octopus eight-wheelers have occasionally been called upon to carry indivisible loads of up to 23¼ tons. Impressive performance of the O680 engine has led to a decision to convert the fleet of Scammell Mountaineer 9 cu. yd. dump trucks, which have been working in the Snowy Mountains for the past eight or nine years, to this power unit.

Special Vehicles

Many of the authority's special-purpose vehicles are based on Leyland chassis. Perishable commodities, for instance, are carried by Comet and Tiger refrigerated vehicles from the railhead at Cooma to various regional centres. Reported as doing a yeoman job in places where conventional vehicles cannot travel is a fleet of Comet 100-h.p. four-wheel-drive platform lorries. One of their routine tasks is the carriage of materials and machinery into the 1,200-ft. deep Tumit 1 power station where petrol-engined vehicles are forbidden because of the safety risk. In winter they transport tracked Sno-Cats which are used in deep snow by electrical linesmen and hydrologists on surveying expeditions.

Two of the Comet four-by-fours are fitted with detachable passenger bodies built by G. H. Oldings, of Sydney. Capable of seating 33 people, they are used in this form when heavy snow and ice conditions on mountain roads make use of normal passenger vehicles impracticable.

Worldwide Popularity

The remarkably satisfactory service record of Leyland Group vehicles in this particularly gruelling service is typical of the experience of operators in many parts of the world. Successes of this type have a cumulative effect and when sound design and fine materials and workmanship are allied with sapient direction of production and service facilities and commercial activities, as has been the case with Leyland Motors, Limited, for many years, the result is the dramatic expansion achieved since the war by the Leyland Group, which almost certainly is now the biggest producer of heavy-duty commercial vehicles in the world.

Leyland Group vehicles at work on the Australian Snowy Mountains scheme: A four-wheel-drive Leyland Comet fitted with detachable 33-seat body for passenger transport when conditions are too difficult for conventional buses; a Scammell Mountaineer serving as a snowplough to clear essential lines of communication; below, a Leyland Hippo tractor hauling a 40-ton Lima shovel in Arctic conditions; and right, a Comet and an Albion Clydesdale, both with 5 cu. yd. tipping bodies, employed on road building

The pace still quickens and the first six months of 1960 have brought an all-round increase in orders for Leyland goods and passenger vehicles compared with the similar period last year. Domestic orders for goods vehicles were 53 per cent and those for buses 42 per cent higher, while export orders were up 62 per cent for goods vehicles and over 50 per cent for passenger vehicles. Output at Leyland factories has again been stepped up to keep pace with the demand for vehicles and an entirely new production plant for Albion Motors in Scotland is planned.

Not only are traditional overseas markets being exploited to the full, but new ones are actively cultivated. Leyland diesel engines fitted to American-built vehicles overseas and to buses by a few percipient operators in the U.S. domestic market, have been steadily earning a reputation for economy, reliability and durability and now, as we record on page 1, the first substantial orders for complete vehicles for United States operators have been negotiated by the new American company, Leyland Motors (U.S.A.), Inc.

EXTRA HIGH FORK LIFT

Quadrupled Mast

TO obtain extra high stacking while maintaining low headroom requirements at the Crawley, Sussex, factory of Vitamins, Limited, the Yale and Towne British materials handling division has produced a quadruple lift series 51 electric fork truck. The truck has an overall height of only 88 in., yet is capable of lifting a load of 1,120 lb. at 27 in. load centre to a height of 19 ft. The quadruple lift attachment consists of a simplex telescopic set of secondary channels which are bolted directly to the primary fork carriage. It is easily removable when the extra lift is not required, or when additional capacity is needed. The primary channel assembly used with the attachment has special roller spacing and oversize rollers to compensate for the stresses due to the extra high fork lift.

Quadruple lift and primary lift are actuated independently of each other. Therefore, the attachment forks may be raised to obtain free lift and then lift with the primary carriage to obtain stacking height. A restricted range of forward tilt has been provided for engaging the pallet and levelling the load.

NIGERIAN RAILCARS

(*Continued from page 7*)

"cutting-out" when the driver changes ends and all controllers are therefore sealed in the normally operative position. They are connected by train lines and are reset simultaneously and the warning signal from the unit earliest to operate is relayed to the operating position.

As is well known, the action of this safety feature, which is axle-driven, depends on distance run and not on a time basis; it ensures that the driver is alert by requiring a further control movement to be made within approximately 2,000 yd. of the proceeding one. If the driver is inactive and a control movement is not made, a warning buzzer sounds; this warning may be cancelled by the driver then making some control movement. If this action, which resets the unit, is not taken within a further distance of approximately 200 yd. the engines are stopped and the brakes are automatically applied. Any normal control action taken by the driver prior to the warning, or one made with the intention of cancelling it, resets the equipment and the cycle is repeated. This vigilance feature is additional to a deadman's device which also cuts out power and brakes the unit in the event of a collapse of the driver allowing the throttle handle to rise; in this event the warning buzzer sounds after 40 yd. and an emergency application of the brake is made in a further 70 yd.

The industrial division of Wakefield-Dick Industrial Oils, Limited, a member of the Castrol group of companies, has appointed P. H. Cripps as regional sales manager for London and the home counties.

Marston Motor Co., Limited, Seven Sisters Road, Tottenham, N.15, has been appointed main distributor of Thornycroft vehicles for the Metropolitan area of London north of the Thames and including counties of Middlesex, Hertfordshire, Bedfordshire, Essex and Bucks.

Stanley Works (G.B.), Limited, has introduced tungsten carbide discs for use with the Stanley Swirlaway ball-jointed drill attachment. The tungsten carbide discs are available in three grades which should not wear out with normal use on wood, plastics and many other materials. Silicon carbide discs are available for work on metal.

NEW RAIL TANK WAGONS

Large Loads on Two Axles

FOR some considerable time a great deal of thought has been given to modifying the design of rail tank wagons to carry greater quantities of oil. Storage and Transport System, Limited, member of a group owning one of the largest fleets of rail tank wagons in Europe, has

The larger capacity Class A wagon

worked on this problem and has now produced a design which has been accepted by British Railways and at the present time 22 cars able to carry up to a maximum of 24½ tons have been built by W. and M. Grazebrook, Limited, of Dudley Port.

The tank barrel is cradled below the level of the underframe, to which it is welded for its whole length, making an integral structure. The cross-members are dropped below the solebar height and shaped to support an arc of the tank's circumference. The end result is a much greater stability and a greater resistance to damage through severe buffing shocks. The wagons are fitted with Skefko roller-bearing axleboxes, hydraulic buffers, screw couplings and vacuum brakes, so that they can run at express freight-train speeds. A much greater capacity has been achieved than with any two-axle tank wagon previously built for use on British Railways. There are two types; both have a length over buffers of 28 ft. 2 in. and of 24 ft. over headstocks, with a wheelbase of 15 ft.

Tank Capacities

Class A wagons have a 7,227-gal., gross tank capacity or, with a 4 per cent ullage allowance, of 6,940 gal. in a tank of 8 ft. 5 in. outside diameter and a length of 22 ft. 2½ in. Tare weight is approximately 10 tons 13 cwt. and the effective payload roundly 24½ tons. The Class B wagons, with a tank 21 ft. 10¼ in. long and 7 ft. 11 in. outside diameter, have a gross capacity of 6,200 gal., or 5,952 gal. allowing for 4 per cent ullage. Tare, weight of 11 tons 4 cwt. gives an effective payload of approximately 23 tons 16 cwt. Five of the wagons have two separate compartments permitting smaller quantities of different products to be carried.

These wagons have been ordered by Petrofina (G.B.), Limited, and will be used to transfer oil from its Avonmouth installation to a large depot in Nuneaton. As a result of the savings which will accrue due to the competitive rates offered by British Railways for this type of traffic it is considered likely that its existing rail tank fleet will be replaced over the next few years by wagons of similar design.

LIVERPOOL BUS STATION

(*Continued from page 5*)

a public address system which can also be controlled from the platform control office. The bus and coach stations are provided with a ring main compressed-air system, lubricating-oil supply and retractable hose reel radiator water filling points. The left luggage and lost property office on the passenger concourse has a hand-operated luggage hoist to the coach station deck.

Interior Finishes

The internal walls are generally of grey concrete bricks, the columns and ceilings being treated with Prodorglaze textured wall surfacing for durability and easy maintenance. The public toilets are treated entirely with decorative wall tiling, the cubicles being built up from Terrazzo slabs. The inquiry office and the public bar are both decorated in contemporary style to give a bright and attractive appearance. The snack bar adjoining the licensed bar has tiled wall finishes and is equipped with automatic vending machines. Kiosks for the sale of sweets and tobacco have been installed on the passenger concourse and also in the coach station. All working surfaces, counters and table tops are covered with Formica and the flooring where used by the public is mostly surfaced with Prodorite non-slip tiles.

With the exception of the maintenance bay the bus and coach station, which was formally inspected on July 5, is now fully operational. It is in every way a vast improvement on the old arrangement which amounted to nothing more than picking up and putting down in Skelhorne Street.

Maintenance Area Nears Completion

At the moment the overnight stabling and maintenance of the 35 vehicles allocated to Central Liverpool is carried out at the small depot in Collingwood Street which is almost a mile distant from the new bus and coach station. When the new maintenance area is completed in about three months' time it is expected that the Collingwood Street depot will be closed, thus saving an appreciable amount of empty vehicle working and releasing the site for redevelopment.

Although intended primarily to serve the needs of Ribble, and indeed the bus station is worked to full capacity to do this—there is a limited available capacity in the coach station. At the moment this is used by Crosville's North Wales express service—as Liverpool has long been an important point of interchange between the two companies.

BUILDINGS FOR AIRLINES

(*Continued from page 3*)

underground air-conditioning system for waiting aircraft pipes cold air from four mechanical equipment rooms in the terminal to covered pits at each plane position. There is one pit for jets and one for the smaller piston planes at each of the eight positions.

New B.E.A. Terminal

Cost of the new B.E.A. air terminal, on which, as already indicated, work began on July 1 and which is scheduled for completion in 1963, will be more than £3,500,000. The new terminal, when fully developed, will be capable of handling up to 7 million passengers a year. In addition to accommodating all B.E.A. staff at present dispersed in various offices in London, part of the space has been especially allocated to house new electronic equipment for dealing with ticket sales and seat reservations.

The new building will be erected alongside the present temporary West London Air Terminal on a site leased from the London Transport Executive. The present steel and concrete raft above the railway tracks will be extended around the building towards the east of the site to provide vehicle exits. A ramp road will lead from street level to the first-floor departure hall. From the hall stairways will descend to the coach embarkation points.

The basement of the new terminal will provide parking space for 140 cars and plans are also being studied to more than double this accommodation by the erection of a fully automatic five-storey car park using electronically controlled lifts designed for one-man operation. Another feature of the building will be the opening and shutting of doors by a concealed floor switch, which automatically opens the doors when the passengers approach them.

The terminal, which extends to 10 floors, will be of reinforced-concrete construction with curtain walling externally. It has been designed for Air Terminals, Limited, a subsidiary of the two British air corporations, by the London firm of Sir John Burnet, Tait and Partners. Messrs. Wakeman, Trower and Partners are the quantity surveyors. Mr. Alfred Beer is the consulting engineer and Messrs. G. H. Buckle and Partners are the consultants for the electrical and mechanical work. The new terminal will be built by Holland and Hannen and Cubitts, Limited, which company submitted the lowest of six tenders entered for the main part of the work.

A.E.C. (Sales), Limited, Export Division, has opened a sales office in the south eastern region depot at 50 Page Street, London, S.W. I (tel. VIC 4777), to consolidate and promote export sales of A.E.C. products originating in Britain.

British Hydrocarbon Chemicals, Limited, announces that erection of its third ethylene plant at Grangemouth, Scotland, has been completed ahead of schedule and the plant is already on stream. It is believed to be the largest of its kind outside the U.S.A. and will more than double the existing capacity of B.H.C.'s two previous ethylene plants, which were first operated in 1951 and 1956 respectively. British Hydrocarbon Chemicals is jointly owned by the British Petroleum Co., Limited, and the Distillers Co., Limited.

FORTHCOMING EVENTS

July 9.—W.W.R.T.S. Visit to Stanton Ironworks.

July 13.—L.R.T.L. Films by A. W. T. Daniel. 153 Drummond Street, N.W.1. 7 p.m.

July 16.—S.R.L.D.S. Visit to Lowestoft concrete works.

July 17.—O.S. (N.W. and Yorks). Visit to Rawtenstall, Ramsbottom and Haslingden undertakings. Rawtenstall Corporation Transport, Bacup Road, Rawtenstall. 2.30 p.m.
S.R.L.D.S. Mystery tour of Surrey and Sussex.

July 23.—O.S. Study tour of Peterborough area independents.
P.W.I. Inspection of new L.T.E. works between Harrow and Rickmansworth
O.S. (Northern). Study tour of Bishop Auckland area.

September 5-11.—Society of British Aircraft Constructors. Annual flying display and exhibition. (Public days September 9-11.)

September 12-16.—Municipal Passenger Transport Association. Conference at Douglas, I.o.M.

September 23-October 1.—Commercial Motor Show. Earls Court.

B.T.C. TRAFFIC RECEIPTS: PERIOD NO. 6—1960

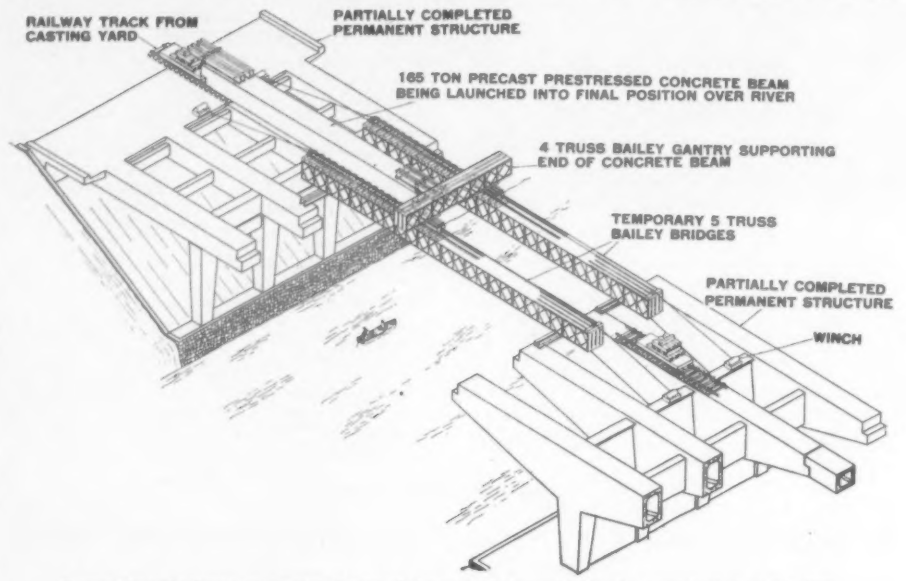
	Four weeks to			Aggregate for twenty-four weeks to		
	June 19 1960 (£ thousands)	June 14 1959	+ or —	June 19 1960 (£ thousands)	June 14 1959	+ or —
PASSENGERS						
British Railways	13,210	11,241	+ 1,969	62,682	57,646	+ 5,036
London Transport						
Road passenger services	4,554	4,336	+ 218	25,879	24,710	+ 1,169
Railways	1,959	1,796	+ 163	11,743	10,958	+ 785
Provincial and Scottish Buses	5,086	4,975	+ 111	26,276	25,787	+ 489
Ships	700	624	+ 76	2,193	2,132	+ 61
Total Passengers	25,509	22,972	+ 2,537	128,773	121,233	+ 7,540
FREIGHT, PARCELS AND MAILS						
British Railways						
*Merchandise and livestock	7,672	7,545	+ 127	47,292	45,869	+ 1,423
*Minerals	3,615	3,299	+ 316	22,901	20,437	+ 2,464
*Coal and coke	7,384	8,017	— 633	51,996	54,176	— 2,180
*Parcels, etc., by coaching train	4,311	4,129	+ 182	25,350	24,463	+ 887
Total Freight British Railways	22,982	22,990	— 8	147,539	144,945	+ 2,594
Others	4,512	4,316	+ 196	25,911	24,796	+ 1,115
Total Freight, Parcels and Mails	27,494	27,306	+ 188	173,450	169,741	+ 3,709
Aggregate	53,003	50,278	+ 2,725	302,223	290,974	+ 11,249

*Includes receipts from collection and delivery, etc.
Comparisons are affected by variations in rates and charges which have been made from time to time.

MAIDSTONE BY-PASS BRIDGE

Positioning of Suspended Span Beams

PRECAST concrete beams weighing 165 tons and measuring 83 ft. in length have been rolled into position recently to form a bridge which will take the western section of the Maidstone by-pass over the River Medway near Aylesford. They are probably the biggest ever to be made and erected in this way. The bridge will be 325 ft. long and 87 ft. wide. The main span over the river is to be 145 ft. long, consisting of two cantilever arms and a central suspended section. The bridge deck is in reinforced concrete, 10 in. thick, supported on four hollow girders of prestressed concrete spaced at 22½-ft. centres and cross connected at about 20-ft. intervals by reinforced concrete diaphragms.



Launching the first centre-span beam of the new Medway bridge for completion of A20(M)

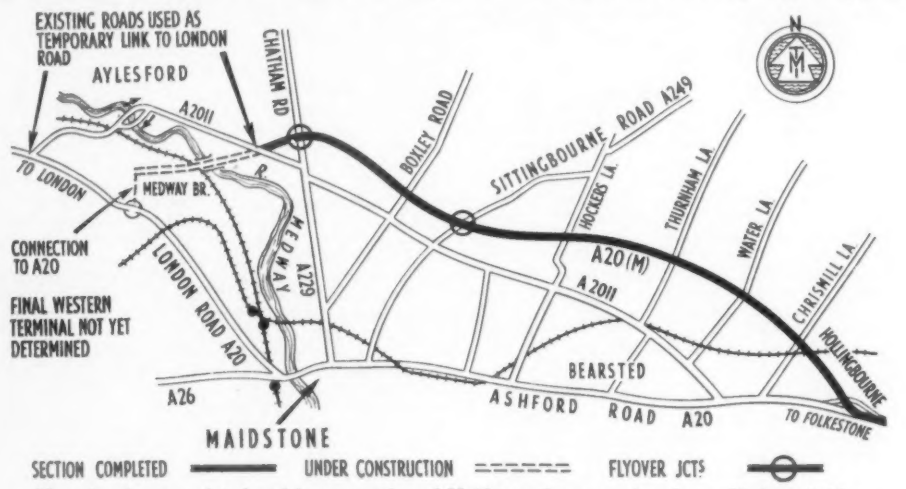
No Interference with Navigation

A requirement of the navigation authorities is that no temporary supports may be placed in the river during construction because of possible danger to or from the barges which use the river. Although the cantilever arms protrude out over the river, their method of construction was not unduly complicated by this requirement. However, special measures involving heavy temporary bridging have been adopted for the central suspended section. The girders of this section have been constructed in a casting yard on the west bank of the river and were manoeuvred into position over the river so as to seat on the cantilever arms.

The operation of launching the first girder is illustrated in an accompanying drawing, which shows the girders of the cantilever arms substantially complete, extending out 20 ft. from the columns on the west bank and 44 ft. from the pier on the east bank. Steel joists in pairs were placed at the ends of three adjacent girders of each of these cantilever arms. They spanned the 15-ft. gaps between adjacent girders and served as supports for the temporary bridging.

Two Bailey bridges, each made up of five Bailey trusses, were assembled on the west bank, rolled out over the west approach span girders and launched across the 90-ft. river gap in the usual manner. The bridges in position, rail tracks were laid on the upper chords and a travelling gantry assembled to span between the Bailey bridges. The gantry itself was made up of four standard Bailey trusses, bearing on bogies travelling on the rail tracks. Travel was controlled by power winches.

With the temporary bridging completed, the first suspended girder was lifted from its bed in the casting area. Bogies were run in under the projecting steel joists which were temporarily attached at each end of the girder. The weight of the girder was then transferred to the bogies by using jacks mounted on the latter. The bogies ran on rail track which extended from the casting yard and thence out over an inner girder of the west approach span. The weight of the precast girder was then transferred from the leading bogie to temporary jacks, the unloaded bogie was carried across the river to rail tracks on the eastern approach for receipt of the leading end of the girder, and final positioning and lowering, after the gantry had carried the girder across the gap.



Map showing completed and in-use section of Maidstone by-pass, site of new Medway bridge and temporary link with A20

OFFICIAL NOTICE

LINCOLNSHIRE ROAD CAR CO., LIMITED

GENERAL MANAGER

A GENERAL Manager will shortly be required by the above Company which operates approximately 400 public service vehicles from Headquarters in Lincoln.

Applicants should have had extensive experience in passenger road transport operations.

There is a contributory pension scheme.

Applications, setting out full particulars of age, present position, experience and indicating salary expected, to be submitted not later than July 12, 1960, marked "Private and Confidential" and addressed to the Chairman, Tilling Group Management Board, 10 Fleet Street, London, E.C.4.

CLASSIFIED ADVERTISEMENT

CLASSIFIED ADVERTISEMENTS should be addressed to THE MANAGER, Classified Advertisements, MODERN TRANSPORT, Russell Court, 3-16 Woburn Place, London, W.C.1.

SITUATION WANTED

MATHS Graduate, with an interest in transport, requires a position in the transport field. Write Box No. 3839, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

ROAD VEHICLE INDUSTRY

Glasgow 72-Seaters Delivery Starts

DELIVERY of 115 Alexander-bodied Leyland Titan PD3 double-deckers to Glasgow Corporation started last week when the first bus was handed over at the new Alexander works at Falkirk by Mr. W. R. Alexander in the presence of transport committee members, Mr. E. R. L. Fitzpayne, the operator's general manager, and Mr. D. G. Stokes, Leyland sales director. The new buses are 30 ft. long and feature the O600 125-b.h.p. Leyland diesel engine and Pneumo-Cyclic semi-automatic gearbox. The 72-seat bodies have a wide forward entrance enclosed by driver-controlled four-leaf doors and resin-glass forward and rear domes produced with smooth surfaces inside and out.

Round-the-Clock Spares Service

OUT-OF-HOURS ordering of Ford spares is now possible at Ford Motor Company's parts and accessories depot at Aveley through use of an automatic telephone-answering machine, which is in operation each night and during weekends and holidays. The machine answers the telephone and stores dictated orders on tape until normal open hours, when express delivery is made of recorded urgent orders.

One of 12 Atkinson three-axle tractors recently delivered to Transvaal Provincial Administration. Features include 210-b.h.p. Cummins diesel, Fuller 10-speed overdrive transmission, Kirkstall cross-country bogie, handbrake air servo, hydraulic steering servo and sleeper cab

New G.M.C. Four-by-Four

NEW four-wheel-drive utility vehicles for 9-cwt. and 13½-cwt. payloads have been introduced by the American G.M.C. truck and coach division. Designated K range, all are powered by a V-6 petrol engine of 305 cu. in. capacity driving through a four-speed main and two-speed transfer transmission.

Blackhawk Jack Range

SAID to cover the whole field of lifting and handling met with by garages and transport concerns, a complete new range of hydraulic jacks has been introduced by Blackhawk, Limited, 12-16 Brunel Road, London, W.3. Various special-purpose machines are included in a range of hand-operated jacks from 1½ to 100 tons capacity.

Triplex Expansion Plans

PLANS to spend a million pounds over the next two years on buildings and plant to increase production are announced by the Triplex Safety Glass Co., Limited. Production facilities at the company's three main factories at King's Norton (Birmingham), Eccleston (St. Helens) and Willesden are to be extended to meet rising demands, though Sir Graham Cunningham, Triplex chairman, warned that the expansion was dependent on peace prevailing within the motor industry.

Hopper Level Switches

TWO types of diaphragm hopper level switches developed by Firth Cleveland Instruments, Limited, Treforest, Glamorgan, are designed to shut off the flow of granular or semi-solid material into a hopper, bunker or silo when the level of the material reaches a height predetermined by the mounting position of the switch. Types are available for open or pressurised hoppers. They should find useful application in the expanding field of bulk delivery.

New Ford Premises in London

WITH the object of bringing together departments currently in separate locations, to provide a closer and more effective management of its sales and service organisation in the United Kingdom, Ford Motor Co., Limited, has set up new headquarters in London for its domestic sales organisation at new offices at 135-147 Cheapside, London, E.C.2. The new premises will house the company's marketing, planning and operational groups, including its car, commercial vehicle, used vehicle and fleet sales, business management, sales promotion and service departments. At the same time, Mr. John Read, general sales manager of the Dagenham company, plans to decentralise as far as possible the division's field operations so that district headquarters in London, Bristol, Stratford-on-Avon, Harrogate and Edinburgh will be in constant close touch with the nation-wide Ford dealer organisation.

Advance With Four 99

WIDE use of 15-cwt. vans fitted with Perkins Four 99 1.6-litre diesel engines is to be made by Advance Laundries, Limited, for its widespread delivery services. Advance has informed Perkins Engines, Limited, that it is to embark on the progressive intake of vehicles built on the 15-cwt. Thames chassis powered by the Four 99. Operating experience over more than three years with a number of vans fitted with the diesel engine is stated to have shown a minimum fuel saving of 50 per cent compared with petrol-engined vans in frequent-stop work.

Nylon Petrol Filter

DISTRIBUTION in the United Kingdom of a Fram nylon in-line petrol filter manufactured by Simminds Aerocessories, Limited, is undertaken by Stenor, Limited, Richmond. Already fitted as standard to a number of American vehicles, the Fram filter is made of nylon and has a pleated paper element that is said to trap water and dirt particles down to a size of a few microns and to have a life of 5,000 hr. Made for ¼, $\frac{5}{16}$ and ⅜ in. o.d. pipes, the unit requires a clear 6-in. pipe run; it is supplied with appropriate tubing and clips.

Trojan Price Reductions

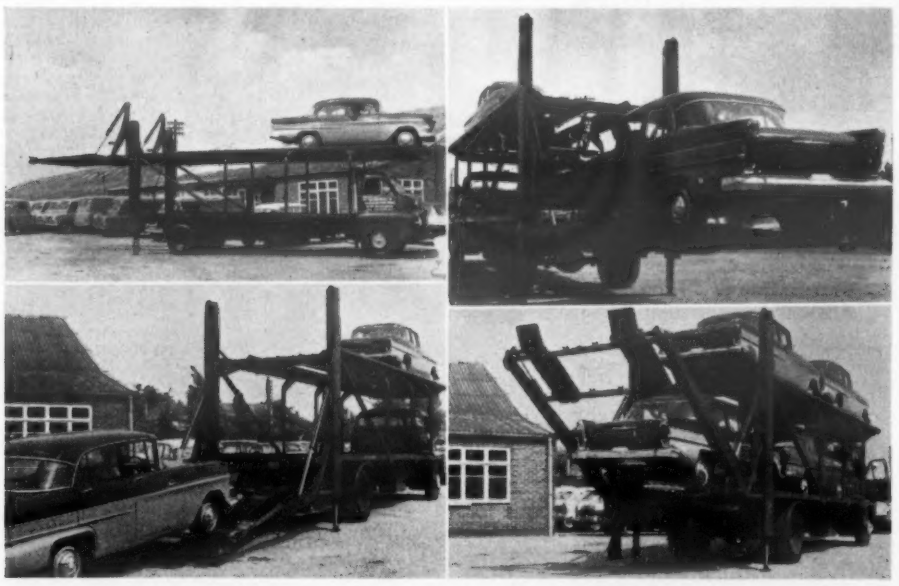
REDUCED prices for all its commercial vehicles are announced by Trojan, Limited. New prices range from £545 for chassis-scuttle and £820 for complete 300-cu. ft. van in the 20-cwt. range to £570 for chassis-scuttle and £845 for complete 350-cu. ft. van in the 25-cwt. class. The 14-seat rural bus now costs £1,175 and the equivalent coach £1,475.

Decorative Plastics Floor Dressing

OF American origin, a decorative grease-resistant plastics dressing for garage and workshop floors and walls named Co-Seal is now manufactured in Glasgow by Stewart Wales, Somerville, Limited. Claimed to be much tougher than any other liquid floor finish, Co-Seal is said to be easy to apply, quick drying, proof against oil and water and unaffected by acids or alkalis.

B.M.C. in Wales

IT is reported that the British Motor Corporation, Limited, has bought a 230-acre site at Felinfoel, near Llanelly, where a plant for the production of car body pressings and sub-assemblies is to be built. Start of production is scheduled for the end of 1961, when some 3,500 workers will be required. The B.M.C. radiator factory at Felinfoel is also to be extended and the labour force increased by 500.



Stages in loading a Bedford car carrier operated by Godfrey's Autocar Delivery Services, with which loading of four cars can be completed in 4 min. Mounted on a Bedford diesel passenger chassis, the Burtonwood body includes hoist controls positioned on the tail lift so that the driver can operate them by foot through the open car door

David Brown Regrouping

TO facilitate further expansion of the group's activities and interests both at home and overseas, the David Brown Corporation, Limited, has decided to separate the tractor, agricultural machinery and automobile sides of its business from the gear, foundry and tool operations. From July 1 a new company, David Brown Tractors, Limited, took over the undertaking and net assets of the tractor division of David Brown Industries, Limited, and became the parent company of the tractor group; Aston Martin Lagonda, Limited, took over the undertaking and net assets of the automobile division of David Brown Industries, Limited, and became the parent company of the automobile group; and David Brown Industries, Limited, after the changes set out above, became the principal operating company of the gear, foundry and tool divisions. The sale of the group's products continue to be made through the David Brown Corporation (Sales), Limited, and, in the case of vehicles and spares, by Aston Martin Lagonda, Limited.

IMPORTANT CONTRACTS

More British Tractors for Yugoslavia

FURTHER orders for British-made tractors and farm implements worth £3¼ million have been placed with Massey-Ferguson by Industrija Traktora I Masina, one of Yugoslavia's main importing and manufacturing organisations. The contract calls for 5,900 tractors, to be delivered by the end of December, and for implements to the value of £600,000. Massey-Ferguson equipment, generally powered by Perkins diesel engines, has become a familiar sight in the Yugoslav countryside. More than 15,000 tractors, a large number of combines and a wide range of other machines have been supplied in the past five years. The current order brings the group's volume of trade with Yugoslavia to more than £18 million since 1955. Massey-Ferguson export sales during the first half of 1960 show increases in Australia, Scandinavia, Italy and Africa and more than a 50 per cent increase in Asia.

Grabs for South Wales Docks

Joseph Westwood and Co., Limited, has been awarded a contract by the British Transport Commission (South Wales Docks) for the supply of grabs for No. 4 Quay, King's Dock, Swansea.

Carlisle Vehicle Purchases

Carlisle Corporation has accepted the tenders of Myers and Bowman, Limited, Harrington, for two Karrier Bantam refuse vehicles and of Graham and Roberts, Limited, Carlisle, for a stretcher ambulance and an 11-seat ambulance.

B.I.C.C. Wins Indian Contract

British Insulated Callenders Cables, Limited, has been awarded a contract by Indian Railways for the electrification of 300 miles of railway track between Delhi and Calcutta, the second big Indian electrification order secured by this company. Value of the present contract is £1,200,000 and work is expected to be completed in 12 months.

Perkins Engines in U.S.A.

Marketing and servicing of Perkins diesel engines throughout America and Canada is to be handled by the Chrysler Corporation's marine and industrial division, Detroit, as a result of an agreement signed between the Perkins concern, Peterborough, and the U.S. company. A recently formed Perkins subsidiary in Detroit, Perkins Engine Co., Inc., will be responsible for the overall development of the United States market and for liaison with U.S. manufacturers using Perkins products internationally.

Co-op Orders More Karriers

An order has been placed by the Co-operative Wholesale Society through Rootes, Limited, Manchester, for 40 Karrier Bantam 8 ft. 2 in. wheelbase chassis-cabs. All but two of the 40 vehicles will be powered by diesel engines.

Esso Exports

During the year 1959 Esso Petroleum Co., Limited, exported petroleum products, excluding bunkers to foreign-going ships, to the value of £12½ million from its refinery at Fawley. The majority went to Denmark and represented more than 12 per cent of British exports to that country. In addition during 1959, the company made purchases in the United Kingdom of materials and equipment totalling £4¼ million on behalf of affiliated companies. These materials were exported to 69 countries.

Canadian D.H. Beavers for British Army

The order for 36 Canadian de Havilland Beaver aircraft for the British Army Air Corps, which was forecast in an announcement on December 17, 1959, has now been formalised. More than 1,500 Beavers have been built by de Havilland in Canada. They are used in large numbers in the United States, Canadian and other forces and in industrial and commercial service in many parts of the world. The main components of the aircraft for the British Army will be manufactured by the Canadian de Havilland Company at Downsview, Toronto, and they will be assembled at the de Havilland factory at Chester, where British equipment, including radio and instruments, will be installed.

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SHIPPING and SHIPBUILDING

Isle of Man Car Ferry

FOR use in the 1962 season onwards the Isle of Man Steam Packet Co., Limited, has ordered a car ferry vessel from Cammell Laird and Co. (Shipbuilders and Engineers), Limited, Birkenhead. She will be the first ferry for cars to be operated by the company and has been designed so that she can load or unload by ramps at any existing Douglas berth despite the 24-ft. tidal variation in water level there. The ship will have accommodation for 60-70 cars and 1,400 passengers but commercial vehicles or coaches will be prohibited by reason of the 8 ft. 6 in. clearance at the loading doors. She will be of 2,500 tons gross, have a length of 325 ft. and be fitted with anti-roll stabilisers and a bow rudder. Service speed will be 21 knots.

Humber Lighter Service Withdrawn

BY closing down the Humber lighterage service on July 2, the B.T.C. estimates that it will save £39,000 per annum. The service has been in operation since 1848 between Hull and New Holland carrying cattle feeding stuffs, imports from Hull, and steel back from Lincolnshire. The alternative rail route is via Stainforth.

Dover–Calais Ferry Replacement

NO details are yet available, but Townsend Brothers Ferries, Limited, the private company operating cross-Channel car ferry services, has ordered a new car ferry vessel to operate on the Dover—Calais route. It is expected to be of twin-screw diesel-powered design and would be able to carry approximately 800 passengers and 100 cars, on two car decks. The new vessel will probably be built in Holland. She will replace the *Halladale*, built in 1944, and it is hoped she will be operating by the start of the 1962 season.

Shipping Guide to be More Frequent

AFTER appearing quarterly since its first appearance as a separate publication in April, 1951, the *A.B.C. Shipping Guide* has become a bi-monthly timetable with the July issue. The price of single copies remains at 7s. 6d. and the annual subscription rate rises to £2 5s. The particulars provided continue to expand and there are more than a dozen newcomers in the current edition. Publisher is Thomas Skinner and Co. (Publishers), Limited, Liverpool House, 15-17 Eldon Street, London, E.C.2.

Boarding Aid for Pilots

A PORTABLE lift, or hoist, designed to assist ships' pilots to board tankers at sea in greater safety and with much less physical strain than by using the conventional flexible ladder, has been tested successfully on the B.P. tanker *British Commander*. Designed by the marine department of the B.P. Tanker Co., Limited, and fabricated by Non-Corrosive Metal Products, Limited, it is intended particularly for use on supertankers. When such vessels are in light condition, the pilot may have to climb as much as 45 ft. up from the pilot boat to the tanker deck. The hoist is made of aluminium. Only two men are required to assemble it, place it in position over the ship's side and operate it. The pilot rides on a small travelling platform which is raised up or lowered down the ship's side by hand winch.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Hobbs Transmission

Birmingham Small Arms Co., Limited, has disposed of its controlling interest (51 per cent) in Hobbs Transmission, Limited, to the minority shareholders.

Cranes (Dereham)

In the year ended March 31 the net profit of Cranes (Dereham), Limited, was £28,234 (£28,770) and the dividend 20 per cent (same).

Dawe Instruments

Simms Motor and Electronics Corporation, Limited, has just completed negotiations to acquire the whole of the issued share capital of Dawe Instruments, Limited, Ealing, and its associated manufacturing company, L.M.K. Manufacturing Co., Limited, Brentford. With the recently acquired Cawkell Research and Electronics, Limited, and Dawe interests now under its control, Simms group is in a position to provide complete coverage on component manufacture, applied electronics and instrumentation.

SOCIAL AND PERSONAL

Inaugural Run of "Midland Pullman"

REPRESENTATIVES of transport and industry were the guests of the London Midland Region of British Railways and the Pullman Car Co., Limited, on July 1 when the inaugural run of the *Midland Pullman* took place from London to Leicester Central and back. Travelling on the train were Sir Reginald Wilson, chairman, London Midland Area Board, Mr. David Blee, general manager, London Midland Region, and Sir John Elliot, chairman, Pullman Car Co., Limited. The Lord Mayor of Manchester, Alderman A. Donavon, signalled away the initial public trip from Manchester earlier that day and the Lord Mayor of London, Sir Edmund Stockdale, performed a similar service at St. Pancras when the train made its return journey to Manchester on July 4.

* * *

Mr. L. J. M. Knotts, M.I.R.S.E., signal engineer, Scottish Region, B.R., retired on June 30. Mr. Knotts was educated at Farnham Grammar School and joined the London and South Western Railway in the apprenticeship grades of the signal and telegraph department in 1917. Following appointments as area assistant in the Western and Eastern sections of the Southern Railway, Mr. Knotts became assistant (s. and t.) at headquarters in 1935 and general assistant in 1940. On the creation of the Railway Executive in 1948, he was appointed assistant (signals) to the chief officer (signals and telecommunications) at headquarters, in which capacity he was engaged in policy and planning in connection with signalling standardisation. He was appointed signal engineer, Scotland, in 1955. At the outbreak of war in 1939 he was placed in command of the 156th Transportation Stores Company R.E. (S.R.). Subsequently he was assistant director, Transportation Stores, 21 Army Group, with the rank of lieutenant-colonel. For services in the Netherlands he was appointed an officer in the Order of Orange Nassau (Mil. Div).

Mr. L. J. M. Knotts

Mr. H. O. Baldwin

* * *

Mr. J. S. French has been appointed a director of J. Spurling, Limited, London, E.14.

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The death is announced of Professor Erich Feuchtinger, the noted German traffic expert, who has been engaged on a study of Dublin traffic problems.

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Mr. Omer G. Voss, who recently returned to the United States after a period of six years as managing director of International Harvester in Great Britain, has been appointed president of International Harvester in Canada.

* * *

Mr. D. L. Craig, manager, Italy, British European Airways, relinquished that appointment at his own request as from June 30 and his new post with the corporation will be announced shortly. Mr. K. A. Timms has been made acting manager, Italy.

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An international meeting to discuss arrangements for co-operation in scientific research into road safety will be held at the D.S.I.R. Road Research Laboratory, Langley, Bucks, from July 12 to 15 inclusive. The meeting is being held under the auspices of the European Productivity Agency of O.E.E.C.

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To mark the 100 years of the Gloucester Railway Carriage and Wagon Co., Limited, the directors held a reception at Whitehall Court, S.W.1, on June 30. Guests were received by General Sir William Morgan, chairman of the company, and Mr. C. Leslie Smith, managing director. They were supported by their fellow directors and executive officers of the company.

* * *

Mr. E. W. Hancock, O.B.E. retires from Humber, Limited, as director of special projects for the Rootes Group at the end of June, having reached retiring age and after being associated with the motor industry (except for four years in the Royal Naval Air Service) for nearly 50 years. He joined Humber as works manager in 1935, and returned to the company in 1948 as director and general manager, after a five-year period as general manager with Rubery Owen, Limited, Darlaston.

* * *

The fire and safety officer of Regent Oil Co., Limited, Lieutenant-Commander Frank West, has just had a book published by William Kimber telling of his experiences of the sinking by German gunfire of S.S. *Britannia* in March, 1941, and of the subsequent voyage of a boat-load of survivors. Eighty-two men filled the lifeboat and covered 1,500 miles across the Atlantic in 23 days at sea. Of the original 82, only 38 survived the journey with no food and very little water, for most of the time. The book is entitled *Life-Boat Number Seven*.

* * *

A solid silver scale model single-deck bus has been presented by East Yorkshire Motor Services, Limited, to Hull Corporation as a permanent memento of the close co-operation between the company and Corporation Transport Department during the past 25 years. In the early thirties East Yorkshire offered to take over the running of the city transport in Hull but there was no development in connection with this overture. In 1935, however, a co-ordination joint committee representative of both undertakings was set up to give the public the best possible transport within their areas of operation. A quarter of a century has now elapsed since the institution of that committee, which has functioned most successfully.

Sir Graham Cunningham has relinquished the managing directorship of the Triplex Safety Glass Co., Limited. He is succeeded by Mr. B. Heath.

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The Society of Motor Manufacturers and Traders announces that the Commercial Motor Show for 1960 will be opened by the Minister of Transport on September 23.

* * *

Mr. F. J. W. Holt, managing director of Motores Perkins, S.A., the F. Perkins associate in São Paulo, Brazil, has been appointed resident representative for the Perkins group in South America.

* * *

Mr. M. B. Morgan, C.B., has been appointed Deputy Controller of Aircraft (Research and Development), Ministry of Aviation, in succession to Dr. W. Cawood, C.B., C.B.E., whose appointment as Chief Scientist to the War Office was recently announced.

* * *

Mr. H. O. Baldwin, A.M.I.R.S.E., assistant signal engineer, has been appointed signal engineer, Scottish Region, B.R., from July 1. Mr. Baldwin was educated at Dalziel High School, Motherwell, and the Royal Technical College, Glasgow. He joined the London Midland and Scottish Railway as an apprentice in the office of the divisional signal and telegraph engineer in Glasgow, in 1930. After periods as signal inspector in 1946 he was made assistant (signals) in the divisional signal and telegraph engineer's office, Glasgow. The following year, Mr. Baldwin took up the post of divisional assistant (signal and telegraph) and in 1948, was appointed assistant signal and telecommunications engineer, Scotland. This position was later redesignated assistant signal engineer.

* * *

Sir William Black, chairman of A.E.C., Limited, has accepted appointment as president of the Institute of Road Transport Engineers. Mr. G. Mackenzie Junner becomes an honorary founder and past-president of the Institute. The vice-president is Mr. J. H. Vincent.

* * *

Mr. R. F. Bushrod, who is at present director and general manager of Lincolnshire Road Car Co., Limited, has been appointed director and general manager of the Eastern National Omnibus Co., Limited, and Tillings Transport (B.T.C.), Limited. He will take up his new duties in the near future.

* * *

We regret to record the death of Mr. Norman Downes Ryder, who, after long experience on provincial newspapers and on technical journals, joined the public relations office of British European Airways in 1947. He served as deputy to the chief public relations officer for a number of years, but, following an illness in 1958, he was advised to work at less pressure and thereafter was concerned particularly with the preparation of special articles and speeches.

The solid silver bus presented by Mr. J. S. Wills, chairman of East Yorkshire Motor Services, to the Lord Mayor of Hull (see story). On one side it depicts an East Yorkshire vehicle, on the other a Hull Corporation Transport one-man bus

We record with regret the death of Mr. H. Firminger, M.I.R.S.E., assistant signal engineer, London Transport, at the age of 58. He joined the London Electric Railways in 1917 as an apprentice in the signal engineer's shops. He became chief assistant to the signal engineer in 1946 and was made a senior executive assistant in 1947. His promotion to principal executive assistant came in 1950 and he was given the title of assistant signal engineer in 1956. He had, however, acted in this capacity for many years before.

* * *

Mr. W. A. Bridge, who until recently was manager of the tank haulage service of the Pickfords Division of B.R.S., retired on June 30. He joined Hay's Wharf Cartage Co., Limited (meat department) in 1928. On the outbreak of war he was appointed North Western area transport manager of the Meat Pool. In 1942 he was seconded for duty with the Ministry of War Transport as Area Road Haulage Officer and was subsequently appointed Divisional Road Haulage Officer, North Western Division. Mr. Bridge was awarded the O.B.E. in 1947. In the following year he became district manager, Liverpool, for B.R.S. and in 1950 tank haulage and meat cartage manager of the Pickfords Division. He surrendered the latter association in 1956 on the formation of B.R.S. (Meat Haulage), Limited. As already announced, Mr. J. W. Finnis is the new chief tank haulage manager.

REPORTING RAILWAY PROGRESS 9

VERY IMPORTANT PASSENGER

The pointer for the businessman with an important job to do in another place — and who wants to count the time between well spent. The diesels de-luxe form a new precedent of passenger service . . . This is the executive suite on wheels, civilised comfort while Getting There. These 90 mph VIP specials, air-conditioned and near-noiseless, will operate between London and Manchester, Leicester, Bristol, Wolverhampton and Birmingham: streamlined luxury for the man who works hard and lives well. The name Pullman has always symbolised superior standards of travel. Now, these sleek blue expresses — white-banded and embellished with the Pullman coat of arms — are here to enhance the meaning of main-line rail service.

Photographed by Roger Wood

8·45 Morning Departure. Five minutes before leaving, he's greeted by a friendly attendant. Just one of the crew who will see to his slightest wish on the smooth, fast, comfortable journey from Manchester to London.

8·47 Luggage for the 'In' tray. Metal racks for bags, attendant to stack the racks, enclosed compartments for heavy luggage.

9·15 Letters for the 'Out' tray. VIP's business schedule continues, at 90 mph, his secretary at his side, dictation at ease.

10·15 Shift to neutral. Work finished, armchair-reclined: a foam-rubber and air-conditioned atmosphere for relaxation.

11·15 Time for aperitif. Pullman living: the spacious gangways, the wine waiter, the silver tray ... club-land conditions.

Round of drinks for a social circle. The parlour-car meeting and the talk between friends and colleagues that are part of the atmosphere of the new VIP service. The surroundings are as pleasantly relaxed as a country-house drawing-room — or as serviceable as the managing director's office suite. It all depends how you wish to use the conditions that British Railways now provide for the city man with no time to waste and who prefers the best — whether you wish to rest and reflect, or to open the brief-case and deal with those papers. Pullman service is designed for both.

From nose to tapered end, the diesel-electric Pullmans have been designed and equipped to bring a new meaning to long-distance fast rail journeys. Six-car and eight-car trains—each with two 1,000 hp diesel engines—will form the élite service of Britain's railway system. Each six-car Manchester-London and Leicester-London train will accommodate 132 first-class passengers ; each eight-car train on the other runs will have 108 first-class and 120 second-class seats. And these are the differences . . . They are the first British trains to be fully air-conditioned. They are smooth-running and almost silent — the saloon-cars are double-glazed and have insulated floors. The armchair seats are deeply padded with foam rubber, mounted on runners for drawing in towards the tables, and the first-class seats individually adjust from upright to reclining positions. The interior décor, which varies from car to car, is in rosewood and ebony veneers, grey plastic hides and red or blue striped upholstery. Ceiling lighting is from white fluorescent panels, and additional illumination comes from the overhead luggage racks and the individual table lamps. Entrance vestibules are spacious ; access gangways between cars are wide and draught-proof. Kitchen and pantry accommodation is equipped with deep-freeze, normal refrigeration, constant boiling water supply, sterilizing and all-purpose stainless steel sinks, and extractor fans. A public address system connects the whole train, and guard and driver are linked by telephone. The cars are joined by a new type of permanent coupling which gives both smooth start and stability at high speed . . . This is the ride into the new railway age.

TIME FOR BUSINESS

12·30 London just down the steps, reached at the right time for the West End or City luncheon date—and the afternoon for conferences.

5·30 Business over. Off for last appointment : the train back.

6·10 Evening Departure. VIP greeted at the door, seen to seat, settled in. And activity starts in the bar, the pick-me-up service for the man in a feet-up mood at the end of the London trip.

7·30 Table for four travellers. Dinner at leisure during transportation at top speed. Behind the scenes : kitchens gleaming like a chef's day-dream ; wine as fine as a gourmet's.

9·5 End of the evening, after a meal to match the elegance and good taste of the surroundings. Brandy, cigar, a light at hand : Manchester fifteen minutes off. Business — and pleasure — complete.

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